COMPUTATIONAL TECHNIQUES AND SMART MANUFACTURING

Edited by
Paolo Ferro, Harinadh Vemanaboina and Chander Prakash

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COMPUTATIONAL TECHNIQUES AND SMART MANUFACTURING

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PROCEEDINGS OF THE 2ND INTERNATIONAL CONFERENCE ON COMPUTATIONAL TECHNIQUES AND SMART MANUFACTURING (ICCTSM 2025), CHITTOOR, INDIA, 18TH—19TH JULY, 2025

Computational Techniques and Smart Manufacturing

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Preface

Welcome to the **International Conference on Computational Techniques and Smart Manufacturing (ICCTSM - 2025)**, hosted at Chittoor, from 18th–19th July 2025. It is our great pleasure to gather esteemed scholars, practitioners, and experts from around the globe for an engaging and enriching event dedicated to **Computational Techniques and Smart Manufacturing**. In a world that is increasingly interconnected and dynamic, ICCTSM- 2025 provides a vital platform for the exchange of knowledge, ideas, and innovations. Our theme this year, "**Computational Techniques and Smart Manufacturing**," underscores the pressing need to explore new frontiers and address the challenges that lie ahead. Through a diverse array, we aim to foster a spirit of collaboration and mutual learning.

The editors would like to thank the participants who have contributed to the volume that has been selected. Efforts taken by peer reviewers contributed to improving the quality of papers. Providing constructive critical comments, improvements, and corrections to the authors is greatly appreciated. We are very grateful to the International/National advisory committee, keynote speakers, Session Chairs, and student volunteers. The **Computational Techniques and Smart Manufacturing** bring together participants from Oman, South Africa, Malaysia, and the USA, each contributing their unique perspectives and expertise. We also express our gratitude to every staff member of the Department of Mechanical Engineering for their solid contribution as the conference organizer and to the Management of **VEMU Institute of Technology** (A), Chittoor, A.P., India, for their constant support towards **ICCTSM-2025**.

During the two days of the conference, the researchers presented the most recent findings in computational techniques from various disciplines and Smart Manufacturing. Also, we are thankful to all the authors who submitted papers, because of which the conference became a stay of success. It was the quality of their presentations and their passion to communicate with the other participants that made this conference series a grand success. Finally, we are thankful for the enormous support of CRC Press in supporting us in every step of our journey towards success. Their support was not only a strength but also an inspiration for organizers.

Dr. Harinadh Vemanaboina
Convener, ICCTSM-2025

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Acknowledgements

The organizing committee of the 2nd International Conference on Computational Techniques and Smart Manufacturing (ICCTSM-2025) extends its heartfelt gratitude to all contributors who made this event a success. We sincerely thank our keynote speakers, session chairs, and paper reviewers for their valuable insights and academic contributions. We also acknowledge the dedicated efforts of the organizing and technical committees, volunteers, and participants whose enthusiasm and cooperation have ensured the smooth conduct of this conference. Finally, we extend our thanks to all delegates for sharing their innovative research and fostering meaningful discussions that advance the fields of computational techniques and smart manufacturing.

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Editor biographies

Paolo Ferro is Full Professor of Metallurgy and Materials Selection at the University of Padua (Italy). He received his Ph.D. degree from the University of Padua in Metallurgical Engineering. He was the scientific director of the research program 'Numerical and Experimental Determination of Residual Stresses in Welded Joints and their Influence on Fatigue Strength'. He won the prize for young researchers 'Aldo Daccò' in 2002 and has published more than 200 works. His research is mainly focused on the analytical and numerical modelling of welding, heat treatment and additive manufacturing processes, with particular attention to residual stresses assessment and their influence on the structural integrity of metallic components.

Harinadh Vemanaboina is an Associate Professor at the Department of Mechanical Engineering, VEMU Institute of Technology, Chittoor, Andhra Pradesh. He has more than 14 years of research and teaching experience. He published more than 70 works and his area of research is Welding Technology (simulation, experimental, conventional and laser processes), Additive Manufacturing (SLM), and Optimization of Process parameters. He is also a guest editor for Recent Patents on Engineering (Scopus), AIP conference proceedings (Scopus, WoS Indexed) for ICSMSM-2022, ICCTSM-2024, and ICASMMT-2024.

Chander Prakash is Vice Chancellor, Sanskaram University, Jhajjar, Haryana (NCR), India. He has served as the Pro-Vice Chancellor, Chandigarh University; Dean-Research & Development at SVKM's Narsee Monjee Institute of Management Studies and Lovely Professional University. He is a dedicated teacher and researcher who embraces student-centric approaches, providing experiential learning to his students. He is interested in developing materials for biomedical and healthcare applications, additive manufacturing, and exploring new cost-effective manufacturing technologies. He has published over 525 (480 SCI/Scopus) scientific articles in reputable peer-reviewed journals, conferences, and books.

He is a highly cited researcher at the international level, and he has 11944 citations, an H-index of 62, and an i-10 index of 227. He is consistently featured in the list of India's Top 1% of leading scientists of Mechanical and Aerospace Engineering on Research.com (2022 and 2023) and held the 24th rank in India and 1414th rank in the world in 2023. He has also been ranked among Stanford's top 2% researchers in 2021, 2022, 2023, 2024 and 2025. He has edited/authored 25 books, served as a series editor of 2 books and as guest editor of several peer-reviewed journals. He is an Editorial board member of Journal of Magnesium and Alloys (IF-17.6, SJR 2.4, Q1), Nanofabrication (IF-2.9, Q2); International Journal on Interactive Design and Manufacturing, IJIDeM (IF-2.1); Cogent Engineering (WOS, IF:

1.9), High-Temperature Materials and Processes (IF: 1.5), Journal of EleScience and Engineering (IF: 2.1), Materials Circular Economy: Science, Engineering, and Sustainability. He has raised over 1.2 million USD in grants from various national and international bodies, including the Ministry of Science & Technology India, UKIERI-DST and SERB Government of India. He has a strong global network of >400 researchers in different fields of study.

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Session 1 Track: Manufacturing processing

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RCA and LDPE partial replacement in bituminous mixtures

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ABSTRACT: As road construction materials become more innovative, construction companies are looking closer at waste materials, such as Recycled Concrete Aggregate (RCA) and Low-Density Polyethylene (LDPE) in bituminous mixtures, as possible sources. This research focuses on bitumen modified with LDPE weight percentages and aggregates partially replaced with RCA. Laboratory analysis and tests were conducted on the penetrative and ductile Marshal mixtures, as well as the impact values of mobile and durable characteristic aggregates. It was demonstrated that an increased binder content increases the likelihood of performance at 2-4% LDPE, and that the binder tends towards optimum softness and ductility as it incorporates more LDPE. The Marshall weight showed that more than 4% LDPE decreased the weight supported, while less than 4% increased it. It was found that 30% RCA replacement had the highest Aggregate Impact Value. The 4% LDPE and 30% RCA turned out to be the best combination in terms of strength with durability. This combination, while still having a balance with waste management and LDPE durable waste, is environmentally sustainable. This technique would be beneficial for eco-friendly pavement construction. Development can be sustainable as well.

Keywords: Bituminous Concrete, Pavement, RCA, LDPE

1 INTRODUCTION

The ongoing expansion of transportation networks and urban infrastructure has led to a substantial increase in demand for construction materials, particularly natural aggregates and bituminous binders. Traditionally, bituminous pavements are constructed using virgin aggregates and petroleum-derived bitumen, both of which are finite and energy-intensive resources [1–4]. The extensive consumption of these materials raises concerns regarding environmental sustainability, economic feasibility, and resource depletion. Concurrently, rapid industrialization, population growth, and modernization have contributed to a significant increase in waste generation, particularly construction and demolition (C&D) debris and plastic waste [5–7]. If not managed effectively, these wastes pose serious environmental threats, such as land scarcity for disposal, leachate contamination, and long-term degradation issues. Recycled Concrete Aggregate (RCA), produced by crushing and processing construction and demolition (C&D) waste, such as demolished concrete structures, has

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gained global attention as a replacement material for natural aggregates [8–10]. RCA contributes to sustainable construction by diverting waste from landfills, conserving non-renewable natural stone resources, and reducing the overall carbon footprint of construction activities. Furthermore, RCA can be incorporated into bituminous mixtures without extensive processing, which enhances its economic viability [11–14]. However, RCA is characterized by higher porosity, lower density, and greater water absorption compared to virgin aggregates, which may influence the mechanical and durability properties of asphalt mixtures. These limitations necessitate a careful evaluation of RCA's suitability in flexible pavement applications.

Despite promising laboratory investigations, the combined effect of RCA and LDPE on the engineering properties of bituminous mixtures remains relatively underexplored. Most studies have focused on either RCA or plastic modification independently, while limited research addresses their combined application. This research gap underscores the need for comprehensive studies to assess the feasibility, performance behavior, and long-term sustainability of partial replacement of RCA and LDPE in asphalt mixtures. Therefore, the present study aims to investigate the potential of incorporating RCA as a substitute for natural aggregates and LDPE as a bitumen modifier in bituminous mixtures. The study emphasizes evaluating key performance indicators, including stability, durability, moisture resistance, and fatigue life, with the broader objective of developing eco-friendly, cost-effective, and high-performance pavement solutions that align with the principles of sustainable development and the circular economy.

The combination of the effects of RCA and LDPE on the engineering properties of bituminous mixtures has been relatively under-researched, despite promising laboratory studies. The majority of research has focused on research studies using either RCA or plastic modification, while very few studies have targeted the combined application. This lack of research is a clear indication of the need for holistic studies to address the feasibility, performance behavior, and sustainability of partial replacement of RCA and LDPE in asphalt mixtures. Therefore, this study aims to investigate the feasibility of incorporating RCA to replace natural aggregates and LDPE in bituminous mixtures as a viable bitumen modifier. In this sense, this study will primarily focus on the evaluation of critical performance parameters, such as stability, durability, moisture susceptibility, and fatigue life, with the overall goal to promote safe, effective, cost-efficient, eco-friendly, and high-performance pavement solutions using RCA and LDPE as sustainable development and circular economy strategies.

2 METHODOLOGIES FOR RESEARCH AND EXPERIMENTS

Establishing the ideal ratios of bitumen content, filler, fine particles, and coarse aggregates are the primary goals of asphalt mix design. This ensures the creation of a mix that is both manageable and robust, offering durability and cost-effectiveness. The following tests involving aggregates are carried out for this study. In a crushing test, an aggregate's resistance to progressive compressive stresses may differ from its resistance to abrupt shock or impact, as measured by the Aggregate Impact Value (AIV). After soaking the sample, a modified Impact test can be used to find the wet Impact value for softer aggregates. Different pavement kinds have maximum permitted AIVs that various organizations have defined.

The following tests involving bitumen are conducted for this study: A penetration test is used to determine the softness or hardness of the bitumen. The Bureau of Indian Standards (BIS) has standardized the test apparatus and protocol. The penetrometer used has a 100g needle assembly and a locking and release mechanism for the needle. Bitumen does not change abruptly when the temperature rises; instead, it gradually becomes more liquid. This means that bitumen needs to be sufficiently fluid to be used in aggregate mixtures, which is usually accomplished by heating. This test, which involves heating a brass ring with a sample

bitumen at a set rate in a fluid medium, is frequently used to ascertain this. Bitumen's ductility is a property that determines the maximum length or extension that it can have before splitting. It is expressed in centimeters as the distance a standard bitumen sample can stretch before breaking. Pavement integrity may be compromised by crack formation caused by insufficient ductility in the bitumen binder.

3 RESULTS AND DISCUSSSION

3.1 *Aggregate impact value test*

The graph represents the variation of aggregate impact value (AIV) with different percentages of aggregate replacement. It is observed that at a 10% replacement rate, the AIV is approximately 31.1%, indicating a relatively higher susceptibility to impact. As the replacement level increases to 20% and 30%, the impact value gradually decreases to approximately 30.4% and 29.8%, respectively, indicating an improvement in aggregate toughness and better resistance to impact loads. This suggests that moderate replacement levels enhance the performance of the aggregate mix. However, at a 40% replacement rate, the AIV rises again to approximately 30.9%, indicating a reduction in impact resistance due to the higher replacement content. Thus, the results suggest that 30% replacement provides the lowest aggregate impact value and therefore represents the most favorable replacement level, offering better resistance to impact forces and improved performance for use in bituminous mixtures.

Table 1. Aggregate impact values before replacement.

	Natural Aggregates			Recycled Concrete Aggregates		
Description	Sample I	Sample II	Sample III	Sample I	Sample II	Sample III
Whole weight of dry sample ($W1$ gm)	308	318	323	303	318	312
Weight of part passing 2.36mm sieve ($W2$ gm)	81	83	87	80	87	84
Aggregate impact value $W2/W1 \times 100$	26.29	26.10	26.59	26.40	27.35	26.92
Average impact value (%)	26.32			26.89		

Table 2. Aggregate impact values after replacement.

Description	10% Replacement		20% Replacement		30% Replacement		40% Replacement	
Trails	1	2	1	2	1	2	1	2
Total weight of dry sample ($W1$ gm)	3012	314	320	322	328	331	325	329
Weight of part passing 2.36mm sieve ($W2$ gm)	96	99	105	110	96	99	99	103
Aggregate impact value $W2/W1 \times 100$	30.76	31.52	32.81	34.16	29.03	30.46	30.46	31.30
Average impact value (%)	31.09		30.42		29.74		30.88	

3.2 *Aggregate crushing test*

The aggregate crushing test determines the resistance of aggregates to crushing when a progressive compressive load is applied. It aids in evaluating the resilience and strength of aggregates for various building applications, including the production of concrete and road

base. By using 90% NA and 10% RCA, 80% NA and 20% RCA, and 70% NA and 30% RCA, we were able to perform the aggregate crushing value test. Therefore, we determine that the ideal content for replacing aggregates is 70% NA and 30% RCA.

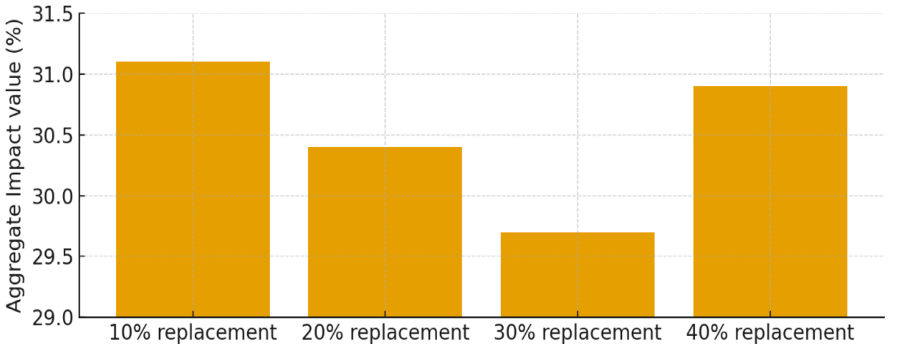

Figure 1. Aggregate impact value test after replacement.

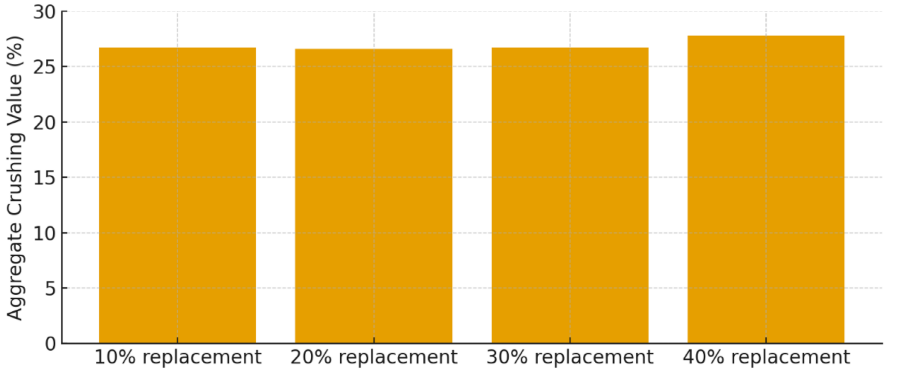

Figure 2. Aggregate crushing value after replacement.

3.3 *Penetration test*

Through the use of a standard loaded needle, a bitumen penetration test may be performed in five seconds. Finally, we got 4% of LDPE is optimum for the bitumen mix. The penetration test is used to measure the hardness or softness of bitumen by determining the depth to which a standard needle penetrates under specified conditions. A higher penetration value indicates softer bitumen, while a lower value reflects harder bitumen. From the results, it is observed that the penetration value of conventional bitumen (0% LDPE) is around 47 mm, indicating a softer binder with less resistance to deformation. With the addition of 2% LDPE, the penetration value decreases to about 32 mm, showing that LDPE stiffens the binder and enhances its hardness. At 4% LDPE, the penetration further reduces to approximately 27 mm, suggesting improved load-bearing ability and resistance to rutting. With 6% LDPE, the value drops to around 20 mm, indicating higher stiffness, which may improve stability but reduce flexibility. At 8% LDPE, the penetration is about 17 mm, making the binder excessively stiff and potentially brittle, which can lead to fatigue cracking under traffic. Hence, the results indicate that the optimum LDPE content lies between 4% and 6%, where the penetration values fall within a desirable range that balances stability and flexibility, while contents beyond this range may compromise pavement performance.

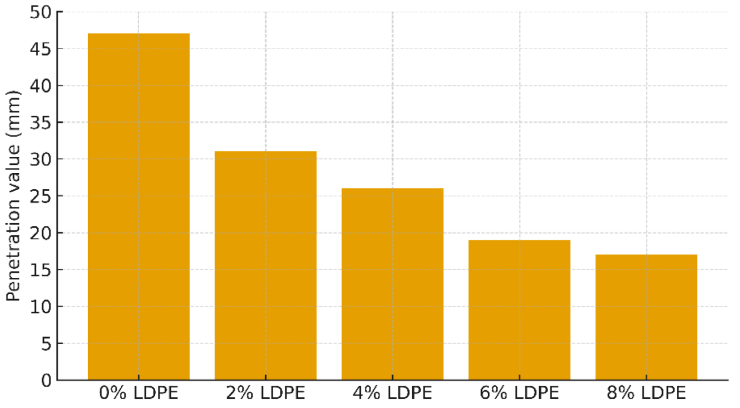

Figure 3. Penetration test values.

3.4 *Ductility test*

The ductility test measures the ability of bitumen to undergo elongation before breaking, which reflects its flexibility and capacity to withstand traffic-induced deformations without cracking. From the results, it is observed that the ductility value of conventional bitumen (0% LDPE) is about 76 cm, indicating high flexibility. With the addition of LDPE, ductility decreases significantly, dropping to approximately 28 cm at 2% LDPE and 22 cm at 4% LDPE, while still maintaining a reasonable balance between flexibility and stiffness. At higher percentages, such as 6% LDPE (15 cm) and 8% LDPE (12 cm), ductility drastically reduces, making the binder too brittle and prone to cracking under repeated loading. Since standard specifications generally require a minimum ductility of 20 cm for bitumen used in road construction, the results suggest that the optimum LDPE content lies around 2% to 4%, where the ductility values remain within acceptable limits while still enhancing the strength and durability of the mix.

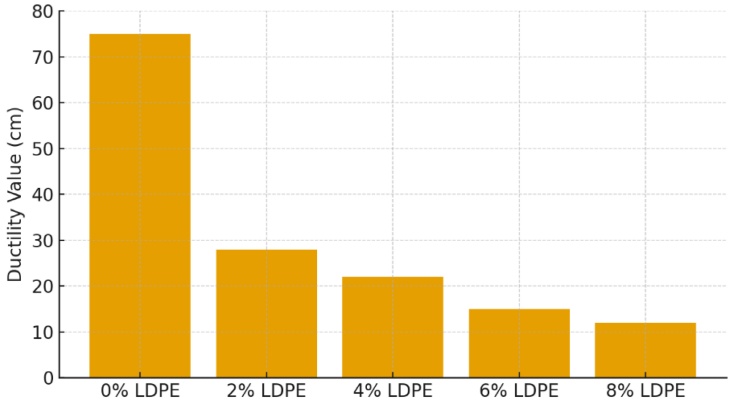

Figure 4. Ductility test values.

3.5 *Marshall stability test*

Using this procedure, a compacted cylindrical specimen of bituminous mixture is loaded diametrically at a deformation rate of 50 mm/min to determine the specimen's resistance to

plastic deformation. The Marshall qualities, including stability, flow value, unit weight, and air voids, were examined in the current investigation. A well-defined graph was used to determine the optimal binder content based on the acquired data. The ideal value was used to prepare new asphalt mixes when the ideal asphalt content was determined.

Table 3. The Marshall stability findings of bituminous concrete soaking for different percentages of LDPE replacement for a period of 1-4 days.

LDPE Component (%)	IRS (average results)			
	Day 1	Day 2	Day 3	Day 4
0	70.42	81.81	65.29	37.62
2	84.30	78.12	78.07	48.48
4	92.3	84.3	84.3	63.84
6	83.85	71.67	71.67	60.45

Table 4. Retained Marshall stability of bituminous concrete soaked between 1-4 days for varying percentage of LDPE replacement.

LDPE component (%)	Marshall Stability Values (N) (average values)				
	Day 0	Day 1	Day 2	Day 3	Day 4
0	2811	1984	2378	1710	1141
2	2580	2399	2325	2075	1625
4	3602.5	3325	3037	2425	2300
6	2400	2012.5	1720	1595	1450

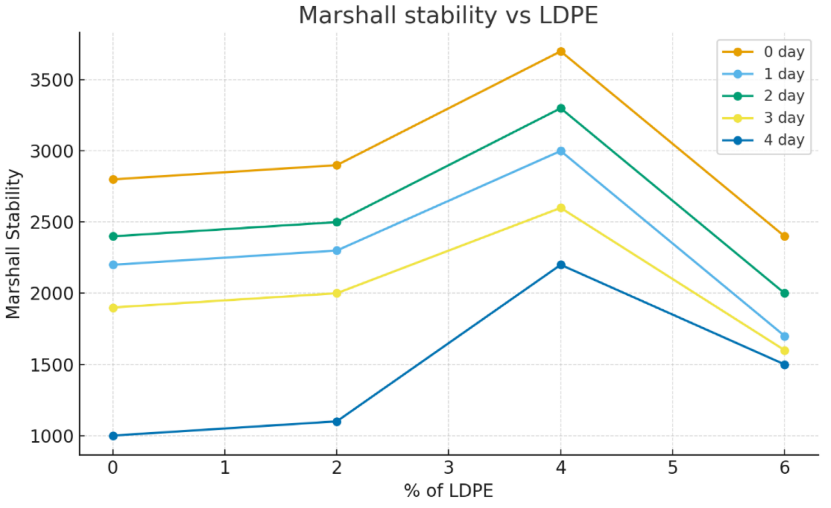

Figure 5. Marshall stability vs LDPE.

4 CONCLUSIONS

The experimental investigations on the partial replacement of aggregates with RCA and the modification of bitumen using LDPE provide valuable insights into the performance of bituminous mixtures. The penetration test results indicate that the addition of LDPE decreases

penetration values, leading to a stiffer binder. The optimum range was observed between 4% and 6% LDPE, where the mix achieves a good balance between hardness and flexibility. The ductility test results indicate that ductility decreases with increasing LDPE content, and values fall below the standard requirements beyond a 4% addition. Hence, LDPE with a 2–4% content is found to be suitable for maintaining adequate flexibility while improving strength. Marshall stability results confirm that stability improves with increasing LDPE content up to 4%, after which it declines. The maximum stability was achieved at a dosage of 4% LDPE, indicating it as the most effective dosage for enhancing load-bearing capacity and durability. In terms of aggregate impact value, the results show that moderate replacement levels improve toughness, with 30% RCA replacement providing the lowest impact value and thus the best resistance to impact loads.Overall, the study concludes that incorporating 4% LDPE as a bitumen modifier and 30% RCA as aggregate replacement yields optimum performance, offering a sustainable, economical, and high-strength bituminous mix suitable for pavement applications. This combination not only enhances engineering properties but also promotes waste utilization and environmental sustainability in road construction.

REFERENCES

[1] Bansal S. and Mishra A.K. (2017). "Evaluation of modified bituminous concrete mix developed using rubber and plastic waste materials," *International Journal of Sustainable Built Environment*, Vols. 2212–6090.

[2] Ezree M., Abd Kader S.A., Hassan N.A., Yaacob H. and Jaya P.R. (2017). "*Effect of Waste Plastic as Bitumen Modified in Asphalt Mixture*," in MATEC Web of Conferences.

[3] Shaikh, N. Khan, F. Shah, D. Shukla and G. Kale (2017). "Use of plastic waste in road construction," *International Journal of Advance Research And Development,* vol. 2, no. 5, pp. 1–19.

[4] Prasad R. and D.S.N.J. (2015). "Bituminous modification with waste plastic and crumb rubber," *IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE)*, vol. 12, no. 3, pp. 108–115.

[5] Reddy, P.N., Vijay, K., Kavyatheja, B., Reddy, G.G.K., Reddy, A.N., Jindal, B.B., and Kumar, A.U. (2024). Impacts of corrosion inhibiting admixture and supplementary cementitious material on early strength concrete. *Discover Applied Sciences*, 6(7), 378.

[6] Kumar, C.A., Reddy, P.N., and Kulkarni, A.P. (2024). Self-sensing concrete with recycled coarse aggregates and multi-walled carbon nanotubes: A sustainable and effective method. *Research on Engineering Structure and Materials*, 10(1), 41–56.

[7] Damodhara Reddy, B., Narasimha Reddy, P., Aruna Jyothy, S., Mohan Babu, M., and Venkata Kavyatheja, B. (2023, June). Predicting compressive strength of self-repairing concrete using artificial neural networks. In *International Conference on Intelligent Manufacturing and Energy Sustainability* (pp. 495–504). Singapore: Springer Nature Singapore.

[8] Kumar, M.A., Vijay, K., Babu, D.S., Reddy, P.N., and Sagar, T.S. (2024, June). Feasible study on optimal utilization of blended fly ash and GGBS on the performance of concrete. In *Journal of Physics: Conference Series* (Vol. 2779, No. 1, p. 012007). IOP Publishing.

[9] Reddy, P.N., Kavyatheja, B.V., Hussain Vali, R., Madhu Mohan, G., Damodhara Reddy, B., Aruna Jyothy, S., and Mohan Babu, M. (2023, June). Predicting the Strength Properties of LWC Using Response Surface. In *International Conference on Intelligent Manufacturing and Energy Sustainability* (pp. 505–515). Singapore: Springer Nature Singapore.

[10] Babu, C.R., Reddy, B.D., Reddy, P.N., Sekhar, B.R., and Babu, M.M. (2023, October). Finite element modeling of short and slender concrete filled GFRP tubular columns. In *AIP Conference Proceedings* (Vol. 2869, No. 1, p. 050001). AIP Publishing LLC.

[11] Reddy, B.D., Babu, M.M., Jyothy, S.A., Kumar, N.K., Reddy, P.N., Kavyateja, B.V., and Kumar, K. H. (2023). Strength and durability of concrete by partial replacement of cement by fly ash and fine aggregates by granite dust. *Materials Today: Proceedings.*

[12] Kavyateja, B.V., Reddy, P.N., and Kumar, C.A. (2022). Properties of self-compacting concrete modified with ultrafine slag. *Res. Eng. Struct. Mater*, 8(2), 371–384.

[13] Kavyateja, B.V., Jawahar, J.G., Sashidhar, C., and Panga, N.R. (2021). Moment carrying capacity of RSCC beams incorporating alccofine and fly ash. *Pollack Periodica*, 16(1), 19–24.

[14] Reddy, P.N., and Naqash, J.A. (2020). Effectiveness of polycarboxylate ether on early strength development of alccofine concrete. *Pollack Periodica*, 15(1), 79–90.

RCA and LDPE partial replacement in bituminous mixtures

Bansal S. and Mishra A.K. (2017). “Evaluation of modified bituminous concrete mix developed using rubber and plastic waste materials,” *International Journal of Sustainable Built Environment*, Vols. 2212–6090.

Ezree M. , Abd Kader S.A. , Hassan N.A. , Yaacob H. and Jaya P.R. (2017). “*Effect of Waste Plastic as Bitumen Modified in Asphalt Mixture*,” in MATEC Web of Conferences.

Shaikh , N. Khan , F. Shah , D. Shukla and G. Kale (2017). “Use of plastic waste in road construction,” *International Journal of Advance Research And Development,* vol. 2, no. 5, pp. 1–19.

Prasad R. and D.S.N.J. (2015). “Bituminous modification with waste plastic and crumb rubber,” *IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE)*, vol. 12, no. 3, pp. 108–115.

Reddy, P.N. , Vijay, K. , Kavyatheja, B. , Reddy, G.G.K. , Reddy, A.N. , Jindal, B.B. , and Kumar, A.U. (2024). Impacts of corrosion inhibiting admixture and supplementary cementitious material on early strength concrete. *Discover Applied Sciences*, 6(7), 378.

Kumar, C.A. , Reddy, P.N. , and Kulkarni, A.P. (2024). Self-sensing concrete with recycled coarse aggregates and multi-walled carbon nanotubes: A sustainable and effective method. *Research on Engineering Structure and Materials*, 10(1), 41–56.

Damodhara Reddy, B. , Narasimha Reddy, P. , Aruna Jyothy, S. , Mohan Babu, M. , and Venkata Kavyatheja, B. (2023, June). Predicting compressive strength of self-repairing concrete using artificial neural networks. In *International Conference on Intelligent Manufacturing and Energy Sustainability* (pp. 495–504). Singapore: Springer Nature Singapore.

Kumar, M.A. , Vijay, K. , Babu, D.S. , Reddy, P.N. , and Sagar, T.S. (2024, June). Feasible study on optimal utilization of blended fly ash and GGBS on the performance of concrete. In *Journal of Physics: Conference Series* (Vol. 2779, No. 1, p. 012007). IOP Publishing.

Reddy, P.N. , Kavyatheja, B.V. , Hussain Vali, R. , Madhu Mohan, G. , Damodhara Reddy, B. , Aruna Jyothy, S. , and Mohan Babu, M. (2023, June). Predicting the Strength Properties of LWC Using Response Surface. In *International Conference on Intelligent Manufacturing and Energy Sustainability* (pp. 505–515). Singapore: Springer Nature Singapore.

Babu, C.R. , Reddy, B.D. , Reddy, P.N. , Sekhar, B.R. , and Babu, M.M. (2023, October). Finite element modeling of short and slender concrete filled GFRP tubular columns. In *AIP Conference Proceedings* (Vol. 2869, No. 1, p. 050001). AIP Publishing LLC.

Reddy, B.D. , Babu, M.M. , Jyothy, S.A. , Kumar, N.K. , Reddy, P.N. , Kavyateja, B.V. , and Kumar, K.H. (2023). Strength and durability of concrete by partial replacement of cement by fly ash and fine aggregates by granite dust. *Materials Today: Proceedings.*

Kavyateja, B.V. , Reddy, P.N. , and Kumar, C.A. (2022). Properties of self-compacting concrete modified with ultrafine slag. *Res. Eng. Struct. Mater*, 8(2), 371–384.

Kavyateja, B.V. , Jawahar, J.G. , Sashidhar, C. , and Panga, N.R. (2021). Moment carrying capacity of RSCC beams incorporating alccofine and fly ash. *Pollack Periodica*, 16(1), 19–24.

Reddy, P.N. , and Naqash, J.A. (2020). Effectiveness of polycarboxylate ether on early strength development of alccofine concrete. *Pollack Periodica*, 15(1), 79–90.

Experimental investigation on acoustic properties of concrete in the presence of exfoliated vermiculite, granite fines and silica fume

Bhattacharya S. and Dharmendra Babu . (2021). Determination of sound absorption coefficient in impedance tubes - Part I & II: Method using standing wave ratio, ISO 10534-1, *International Journal of Engineering and Advanced Technology*, Vol. 9, No. 1, pp.125–133. (DOI:10.35940/ijeat.F8818.088619).

Garai M. and Pompoli F. (2005). A simple empirical model of polyester fibre materials for acoustical applications. *Applied Acoustics*, vol. 66, No 12, pp. 1383–1398.

Pilon D. , Panneton R. , and Sgard F. (2004). Behavioral criterion quantifying the effects of circumferential air gaps on porous materials in the standing wave tube, *The Journal of the Acoustical Society of America*, no 1, pp. 344–356, (DOI:10.1121/1.1756611).

Åbom M. and Bodén H. (1988). Error analysis of twomicrophone measurements in ducts with flow, J. Acoust. Soc. Am., vol. 83, no. 6, pp. 2429–2438.

Gibiat V. (1990). Acoustical impedance measurements by the two-microphone-three- calibration (TMTC) Methods, *The Journal of the Acoustical Society of America* 88, Vol 88, pp. 2533–2545 (https://doi.org/10.1121/1.399975).

Yang Z. , Dai H.M. , Chan N.H. , Ma G.C. , Sheng P. (2010). Acoustic metamaterial panels for sound attenuation in the 50–1000 Hz regime. Appl. Phys. Lett. 2010;96:041906. doi: 10.1063/1.3299007.

Cho, Y. , and Nelson, P.A. (2002). Least squares estimation of acoustic reflection coefficient. In *Institute of Acoustic Spring Conference*.
Reddy, P.N. , Vijay, K. , Kavyatheja, B. , Reddy, G.G.K. , Reddy, A.N. , Jindal, B.B. , & Kumar, A.U. (2024). Impacts of corrosion inhibiting admixture and supplementary cementitious material on early strength concrete. *Discover Applied Sciences*, 6(7), 378.
Kumar, C.A. , Reddy, P.N. , & Kulkarni, A.P. (2024). Self-sensing concrete with recycled coarse aggregates and multi-walled carbon nanotubes: A sustainable and effective method. *Research on Engineering Structure and Materials*, 10(1), 41–56.
Damodhara Reddy, B. , Narasimha Reddy, P. , Aruna Jyothy, S. , Mohan Babu, M. , & Venkata Kavyatheja, B. (2023, June). Predicting Compressive Strength of Self-Repairing Concrete Using Artificial Neural Networks. In *International Conference on Intelligent Manufacturing and Energy Sustainability* (pp. 495–504). Singapore: Springer Nature Singapore.
Kumar, M.A. , Vijay, K. , Babu, D.S. , Reddy, P.N. , & Sagar, T.S. (2024, June). Feasible study on optimal utilization of blended fly ash and GGBS on the performance of concrete. In *Journal of Physics: Conference Series* (Vol. 2779, No. 1, p. 012007). IOP Publishing.
Reddy, P.N. , Kavyatheja, B.V. , Hussain Vali, R. , Madhu Mohan, G. , Damodhara Reddy, B. , Aruna Jyothy, S. , & Mohan Babu, M. (2023, June). Predicting the Strength Properties of LWC Using Response Surface. In *International Conference on Intelligent Manufacturing and Energy Sustainability* (pp. 505–515). Singapore: Springer Nature Singapore.
Babu, C.R. , Reddy, B.D. , Reddy, P.N. , Sekhar, B.R. , & Babu, M.M. (2023, October). Finite element modeling of short and slender concrete filled GFRP tubular columns. In *AIP Conference Proceedings* (Vol. 2869, No. 1, p. 050001). AIP Publishing LLC.
Reddy, B.D. , Babu, M.M. , Jyothy, S.A. , Kumar, N.K. , Reddy, P.N. , Kavyateja, B.V. , & Kumar, K.H. (2023). Strength and durability of concrete by partial replacement of cement by fly ash and fine aggregates by granite dust. *Materials Today: Proceedings*.
Kavyateja, B.V. , Reddy, P.N. , & Kumar, C.A. (2022). Properties of self-compacting concrete modified with ultrafine slag. *Res. Eng. Struct. Mater*, 8(2), 371–384.
Kavyateja, B.V. , Jawahar, J.G. , Sashidhar, C. , & Panga, N.R. (2021). Moment carrying capacity of RSCC beams incorporating alccofine and fly ash. Pollack Periodica, 16(1), 19–24.
Reddy, P.N. , & Naqash, J.A. (2020). Effectiveness of polycarboxylate ether on early strength development of alccofine concrete. *Pollack Periodica*, 15(1), 79–90.
Jayaprakash P.O. , Reddy P.N. , Kavyatheja B.V. , Reddy B.D. , Babu M.M. , Kunamineni V. (2024), Performance evaluation of fiber reinforced concrete modified with copper slag and styrene butadiene, “Innovations and Applications of Fiber-Reinforced Concrete, Nova Science Publishers, Inc., pp. 45–54.
Reddy P.N. , Kavyatheja B.V. , Kunamineni V. , Reddy B.D. , Jyothy S.A. , Babu M.M. , Jayaprakash P.O. (2024), Fiber reinforced concrete-A review, (2024) *Innovations and Applications of Fiber-Reinforced Concrete, Nova Science Publishers, Inc.*, pp. 35–43.

Sustainable development of ternary blended concrete: Experimental study on strength and durability characteristics

Babu, C.R. , Reddy, B.D. , Reddy, P.N. , Sekhar, B.R. , and Babu, M.M. (2023, October). Finite element modeling of short and slender concrete filled GFRP tubular columns. In *AIP Conference Proceedings* (Vol. 2869, No. 1, p. 050001). AIP Publishing LLC.
Damodhara Reddy, B. , Narasimha Reddy, P. , Aruna Jyothy, S. , Mohan Babu, M. , and Venkata Kavyatheja, B. (2023, June). Predicting Compressive Strength of Self-Repairing Concrete Using Artificial Neural Networks. In *International Conference on Intelligent Manufacturing and Energy Sustainability* (pp. 495-504). Singapore: Springer Nature Singapore.
IS 10262 . (2019). Concrete mix proportioning guideline. Bureau of Indian Standards. New Delhi. Indian.
IS 12269 . (2013). Ordinary Portland Cement, 53 grade specification, Bureau of Indian Standards, New Delhi, Indian.
IS 383 . (2013). Indian Standard Specification for Coarse and Fine Aggregates from Natural Sources for Concrete, Bureau of Indian Standards, New Delhi. Indian.
IS 516 . (1959). Methods of tests for strength of concrete. New Delhi. India. Bureau of Indian Standards.
IS 5816 . (1999). Splitting tensile strength of concrete. Method of test. New Delhi. Bureau of Indian Standards.
Jayaprakash P.O. , Reddy P.N. , Kavyatheja B.V. , Reddy B.D. , Babu M.M. , Kunamineni V. (2024), Performance evaluation of fiber reinforced concrete modified with copper slag and styrene butadiene, “ *Innovations and Applications of Fiber-Reinforced Concrete, Nova Science Publishers*, Inc., pp. 45–54.

Maganti, T.R. , and Boddepalli, K.R. (2025). Mechanical and microstructural properties of sustainable ternary blended alkali-activated concrete. *Next Sustainability*, 6, 100122.
Memon, N.A. , Memon, M.A. , Lakho, N.A. , Memon, F.A. , Keerio, M.A. , and Memon, A.N. (2018). A review on self compacting concrete with cementitious materials and fibers. *Engineering, Technology & Applied Science Research*, 8(3), 2969-2974.
Navaneetha, E. , Rao, P.N. , and Bahurudeen, A. (2025). Development of sustainable and durable ternary blended concrete using sugarcane bagasse ash and glass powder. *Construction and Building Materials*, 466, 140329.
Neville AM (2011) Properties of Concrete, 5th edn. Prentice Hall, Pearson, London, UK.
Ramezanianpour A.A. and Malhotra V.M. (1995). Effect of curing on the compressive strength, resistance to chloride-ion penetration and porosity of concretes incorporating slag, fly ash or silica fume, *Cement and Concrete Composites*. 17, no. 2, 125–133, 2-s2.0-0029225694.
Reddy P.N. , Kavyatheja B.V. , Kunamineni V. , Reddy B.D. , Jyothy S.A. , Babu M.M. , Jayaprakash P.O. (2024), Fiber reinforced concrete-A review, 2024 Innovations and Applications of Fiber-Reinforced Concrete, Nova Science Publishers, Inc., pp. 35–43.
Reddy, P.N. , Kavyatheja, B.V. , Hussain Vali, R. , Madhu Mohan, G. , Damodhara Reddy, B. , Aruna Jyothy, S. , and Mohan Babu, M. (2023, June). Predicting the Strength Properties of LWC Using Response Surface. In *International Conference on Intelligent Manufacturing and Energy Sustainability* (pp. 505-515). Singapore: Springer Nature Singapore.
Safiuddin, M. , West, J.S. , and Soudki, K.A. (2010). Hardened properties of self-consolidating high performance concrete including rice husk ash. *Cement and Concrete Composites*, 32(9), 708-717.
Teja , K. Varun , P. Purnachandra Sai , and T. Meena . (2017). “Investigation on the behaviour of ternary blended concrete with scba and sf.” In *IOP Conference Series: Materials Science and Engineering*, vol. 263, no. 3, p. 032012. IOP Publishing.
Thomas, M.D.A. (2007). Optimizing the use of fly ash in concrete (Vol. 5420, pp. 1-24). Skokie, IL, USA: Portland Cement Association.
Vairagade, V.S. , Bahoria, B.V. , Isleem, H.F. , Shelke, N. , and Mungle, N.P. (2025). Strength and durability predictions of ternary blended nano-engineered high-performance concrete: Application of hybrid machine learning techniques with bio-inspired optimization. *Engineering Applications of Artificial Intelligence*, 148, 110470.

Experimental evaluation of self-healing concrete: Strength enhancement and microstructural characterization

Achal Abhijeet Mukerjee V. and Sudhakara Reddy M. (2013). Biogenic treatment improves the durability and remediates the cracks of concrete structures, *Construction and Building Materials* 48, 1–5
ASTM C 642-06 Test methods for density, Absorption and voids in hardened concrete.
Chithra P Bai and Shibi Varghese . (August 2016). An experimental investigation on the strength properties of fly ash based bacterial concrete. *International Journal of Innovative Research in Advanced Engineering (IJIRAE)* ISSN: 2349-2763 Issue 08, Volume 3.
De Belie N. and De Muynck W. , Crack repair in concrete using biodeposition, © 2009 Taylor & Francis Group, London, ISBN 978-0-41546850-3
IS 10262:2009 Code for Concrete Mix Proportion, Bureau of Indian Standards, New Delhi, India
IS 12269:1987 Code for 53 grade of ordinary Portland cement, Bureau of Indian Standards, New Delhi, India
IS 2386 (Part-1)-1983- Methods of test for aggregates for concrete
IS 383:1970 , IS 2386:1983 Code for specifications of test for aggregates, Bureau of Indian Standards, New Delhi, India.
IS 383-1970 -Specification for coarse aggregate and fine aggregate from natural sources.
IS 4031 (Part-1)-1996- Methods of physical tests on hydraulic cement
IS 456-2000 Code of practice for plain and reinforced concrete structure, Bureau of Indian Standards, New Delhi, India
IS 650-1966 -Specification for standard sand for testing of cement.
Kartik M. Gajjar , (2013). *A Study of Performance of Bacillus Lentus on Concrete Cracks*, ISSN -2250-1991,Volume : 2 | Issue : 7
Kim H.K. , Park S.J. , Han J.I. and Lee H.K. (2013). Microbially mediated calcium carbonate precipitation on normal and lightweight concrete, *Construction and Building Materials* 38, 1073–1082
Kim Van Tittelboom Nele De Belie , Willem De Muynck and Willy Verstraete , use of bacteria to repair crack, Cement and Concrete Research 40 (2010) 157–166

Mayur Shantilal Vekariya , (2013). Bacterial concrete: New Era For Construction Industry, *International Journal of Engineering Trends and Technology (IJETT)* –Volume 4 Issue 9-
Mohan Ganesh G. , Santhi A.S. , Kalaichelvan G. (September 2017). Self-Healing Bacterial Concrete By Replacing Fine Aggregate With Rice Husk. *International Journal of Civil Engineering and Technology (IJCIET)* Volume 8, Issue 9, pp. 539–545, Article ID: IJCIET_08_09_062.
Navdeep Kaur Dhami , M. Sudhakara Reddy and Abhijit Mukherjee , (2012). Improvement in strength properties of ash bricks by bacterial calcite, *Ecological Engineering* 39, 31–35
Navneet Chahal and Rafat Siddique , (2013). Permeation properties of concrete made with fly ash and silica fume: Influence of ureolytic bacteria, *Construction and Building Materials* 49 161–174
Navneet Chahal , Rafat Siddique and Anita Rajor , (2012). Influence of bacteria on the compressive strength, water absorption and rapid chloride permeability of fly ash concrete, *Construction and Building Materials* 28, 351–356
Rafat Siddique and Navneet Kaur Chahal , (2011). Effect of ureolytic bacteria on concrete properties, *Construction and Building Materials* 25 3791–3801
Ramakrishnan V. , Ramesh K. Panchalan and Sookie S. (2001). Bang improvement of concrete durability by bacterial mineral precipitation, the South Dakota School of Mines & Technology, SP-225-2
Schlangen E , Jonkers H. , Qian S. and Garcia A. (2010). Recent advances of self-healing concrete,ISBN: 978-89-5708-180-8, 2010.
Sudipta Majumdar et al , Use of Bacterial Protein Powder in Commercial Fly Ash Pozzolana Cements for High Performance Construction Materials, *Open Journal of Civil Engineering*, http://dx.doi.org/10.4236/ojce.2012.24029
Sunil Pratap Reddy S , M.V. Seshagiri Rao , P. Aparna and Ch Sasikala , (2010). Performance of standard grade bacterial(bacillus subtilis) concrete, *Asian Journal of Civil Engineering (building and housing)* vol. 11, no. 1 pages 43–55
Varenyam Achal Xiangliang Pan and Nilüfer Özyurt , (2011). Improved strength and durability of fly ash-amended concrete by microbial calcite precipitation, *Ecological Engineering* 37, 554–559

Building the future: Manufacturing of foldable high-rises

Battal, A. (2023). The use of smart materials in architecture: Nitinol-based foldable façade systems. *Journal of Technology in Architecture, Design and Planning*, vol. 1, no. 1, pp. 1–9.
Beatini, V. , et al. (2022). Integration of origami and deployable concept in volumetric modular units. *Scientific Reports*, vol. 12, no. 1, p. 19180
Garcia-Mora, C.J. , and J. Sanchez-Sanchez . (2021). Actuation methods for deployable scissor structures. *Automation in Construction*, vol. 131, p. 103894.
Mehta, H. , et al. (2020). Design & fabrication of foldable automatic stairs. *International Research Journal of Engineering and Technology (IRJET)*, vol. 7, no. 5, 2020.
Salamah, H. , et al. (2018). Deployable structure as architectural active structure on sports building in Bandung. *MATEC Web of Conferences*, vol. 197, 2018, p. 17004.
Nunes, E.F. (2016). Retractable structure for emergency buildings. *Insights and Innovations in Structural Engineering, Mechanics and Computation, CRC Press*, 2016, pp. 833–836.
Li, H. , et al. (2015).Foldabilizing furniture. *ACM Transactions on Graphics (TOG)*, vol. 34, no. 4, 2015, pp. 90-1.
Babaei, M. , and E. Sanaei . (2009). Geometric and structural design of foldable structures. *IASS 2009. Evolution and Trends in Design, Analysis and Construction of Shell and Spatial Structures*, 2009, pp. 2392–2403.
Patel, V. , Popli, S. , & Bhatt, D. (2014). Utilization of plastic waste in construction of roads. *International Journal of Scientific Research*, 3(4), 161-163.
Lee, J. , and H. Kim . (2020). Deployable lightweight truss systems using shape memory polymers for adaptive architecture. *Journal of Smart Materials and Structures*, vol. 29, no. 4, 2020, p. 045007.
Zhao, Y. , L. Wang , and M. Liu . (2019). Hydraulic and pneumatic actuation for large-scale foldable roofs: Control strategies and structural stability. *Automation in Construction*, vol. 102, pp. 123–134.
Singh, P. , R. Kumar , and S. Sharma . (2022). Electromechanical actuators and sensor integration for robotic foldable Façades. *Building and Environment*, vol. 215, p. 108943.
Nguyen, T. , and Q. Tran . (2023). Hybrid scissor and telescopic folding mechanisms for deployable multi-story structures. *Journal of Architectural Engineering*, vol. 29, no. 1, p. 04022045.
Kim, H. , and J. Park . (2022). Machine learning algorithms for robotic folding of complex architectural forms. *Automation in Construction*, vol. 136, 2022, p. 104196.

Wang, Y. , and Z. Li . (2024). Hybrid kinetic façades with mechanical and pneumatic actuation for dynamic shading. *Building and Environment*, vol. 249, 2024, p. 109990.
Fernandez, R. , P. Silva , and M. Torres . (2020). Inflatable origami structures for rapid deployment in disaster relief. International Journal of Disaster Risk *Reduction*, vol. 47, 2020, p. 101563.
Aarif, A. , et al. (2022). Folding house. *Sustainability, Agri, Food and Environmental Research-Discontinued*, vol. 10, 2022.
Plazos, D.F. , et al. (2023). Design of Foldable Shelter for Post-disaster Response. *Construction Technologies and Architecture*, vol. 5, 2023, pp. 47–52.
Strashnov, S.V. , S.M. Mabhena , and L.A. Alborova . (2022). Folded Surfaces in Architecture. *Building and Reconstruction*, no. 2, 2022, p. 100.
Gatheeshgar, P. , et al. (2020). Optimised cold-formed steel beams in modular building applications. *Journal of Building Engineering*, vol. 32, 2020, p. 101607.
Nazir, F. , et al. (2021). Comparison of modular and traditional UK housing construction: A bibliometric analysis. *Journal of Engineering, Design and Technology*, vol. 19, no. 1, 2021, pp. 164–186.
de Waal, L. , et al. (2021). Dynamic behaviour of graded origami honeycomb. *International Journal of Impact Engineering*, vol. 157, 2021, p. 103976.
Pérez-Valcárcel, J. , et al. (Oct. 2021). Deployable cylindrical vaults with reciprocal linkages for emergency buildings. *Structures*, vol. 33, Oct. 2021, pp. 4461–4474. Elsevier.
Bertram, N. , et al. (2019). Modular construction: From projects to products. McKinsey & Company: Capital projects & infrastructure, vol. 1, no. 1, pp. 1–34.
Bouleau, L. , et al. (2019). χ-Shell: A spatial deployable lattice structure compared with reticulated shells. *Automation in Construction*, vol. 108, , p. 102944.
Gattas, J.M. , and Z. You . (2015). Geometric assembly of rigid-foldable morphing sandwich structures. *Engineering Structures*, vol. 94, 2015, pp. 149–159.

Sensor-based crack detection in concrete structures, including technologies, challenges, and trends

Grill, J. , Haber, L. , and Zych, M. (2023). Crack monitoring on concrete structures with distributed Fiber optic sensors. *Structural Concrete*.
Jang, J. , Kim, J. , and Pakzad, S. (2017). Development of an autonomous bridge deck inspection robotic system. arXiv preprint arXiv:1704.07400.
Jung, J. , Kim, J. , and Park, H. (2019). Vision-based autonomous crack detection of concrete structures using a fully convolutional encoder–decoder network. Sensors, 19(19), 4251.
Kawamura, M. , et al. (2007). Crack detection in metallic structures using piezoceramic sensors. *Key Engineering Materials*, 167-168, 112-117.
Chen, Jiang , Zizhen Zeng , Ying Luo , Feng Xiong , and Fei Cheng . (2023) Crack detection for wading-concrete structures using water irrigation and electric heating. *Environmental Science and Pollution Research*.
Petrenko, A. , Romanova, N. , and Tashlakov, A. (2021). Internal crack detection in concrete pavement using discrete strain sensors. *Proceedings of the International Conference*.
Schluecker, E. , Gao, T. , and Niezrecki, C. (2019). Concrete crack detection and monitoring using a capacitive dense sensor array. *Sensors*, 19(8), 1843.
Song, G. , Li, Z. , and Mo, Y.L. (2017). Crack detection in steel girders of bridges using a broken wire electronic binary sensor. *Smart Structures and Systems*, 19(4), 527-541.
Wang, Y. , Chen, B. , and Liang, W. (2019). Early crack detection of reinforced concrete structures using embedded ultrasonic sensors. *Sensors*, 19(18), 3879.
Zhang, L. , Song, Z. , and Li, J. (2020). Advances in deep learning methods for pavement surface crack detection and identification with visible light visual images. arXiv preprint arXiv:2012.14704.
Berrocal, Carlos G. , Ignasi Fernandez , and Rasmus Rempling . (2021). Crack monitoring in reinforced concrete beams by distributed optical fiber sensors. *Structure and Infrastructure Engineering* 17.1: 124-139.
Garcia Diaz, Julian , Nieves Navarro Cano , and Edelmiro Rua Alvarez . (2020). “Determination of the real cracking moment of two reinforced concrete beams through the use of embedded fiber optic sensors.” *Sensors* 20.3 : 937.
Silva , KK Santos , et al. (2021). “On the use of embedded fiber optic sensors for measuring early-age strains in concrete.” *Sensors* 21.12: 4171.
Wang, Y. , et al. (2023). Structural health monitoring using sensor networks: A review. *Sensors*, 23(12), 4563.

Carrasco, Á. , et al. (2021). A review on the applications of acoustic emission technique in concrete structures. *Acoustics Australia*, 49(1), 121–131.
Pullin, R. , et al. (2017). Digital image correlation and AE analysis of crack growth in aerospace steel. *Procedia Structural Integrity*, 5, 1005–1012.
Lindley, S. , et al. (2021). Nonparametric Bayesian inference for acoustic emission event detection. *Engineering Fracture Mechanics*, 253, 107890.
Gao, Y. , et al. (2023). Recent progress in fiber-optic sensors for structural health monitoring. *Sensors*, 23(5), 2134.
Rodríguez, C. , et al. (2023). Rayleigh-scattering distributed fiber optic sensors for crack monitoring. *Structural Control and Health Monitoring*, 30(1), e3085.
He, J. , et al. (2021). Coherent fiber-optic acoustic emission sensing: A comparison with piezoelectric sensors. *Sensors and Actuators A: Physical*, 331, 112946.
Yin, F. , et al. (2020). Crack depth estimation using ultrasonic TOFD techniques. NDT & E International, 115, 102328.
Zhang, H. , et al. (2021). Fourier and PCA-based thermography for crack detection in concrete. *Construction and Building Materials*, 294, 123612.
Avci, O. , et al. (2020). A review of vibration-based damage detection in civil structures. *arXiv preprint arXiv* :2010.01095.
Omondi, D. , et al. (2021). Monitoring crack formation in concrete using digital image correlation and acoustic emission. *Materials*, 14(2), 291.
Carpinteri, A. , et al. (2019). Acoustic emission and FBG sensors combined for SHM of concrete structures. *Sensors*, 19(11), 2529.
Zhang, Y. , et al. (2022). Machine learning-based crack detection in real bridge images. *Automation in Construction*, 133, 104009.
Yuan, Qi , Yufeng Shi , and Mingyue Li . (2024). “A review of computer vision-based crack detection methods in civil infrastructure: Progress and challenges.” *Remote Sensing* 16.16: 2910. 28
Yoon, Jiyoung ; Lee, Junhyeong ; Kim, Giyoung ; Ryu, Seunghwa and Park, Jinhyoung . (2022). Deep neural network-based structural health monitoring technique for real-time crack detection and localization using strain gauge sensors. *Scientific Reports*. 12. 10.1038/s41598-022-24269-4.
Lu, Y. , and Zongjin Li . (2010). Crack detection using embedded cement-based piezoelectric sensor. *Fracture Mechanics of Concrete and Concrete Structures—Assessment, Durability, Monitoring and Retrofitting of Concrete Structures*.

Tool for translating Indian sign language hand gestures

Dubey, P. ; Shrivastav, M.P. Iot Based Sign Language Conversion. *Int. J. Res. Eng. Sci. (IJRES)* 2021, *9*, 84–89.
Sutton-Spence, R. ; Woll, B. (1999). Linguistics and Sign Linguistics. In *The Linguistics of British Sign Language: An Introduction*; Cambridge University Press: Cambridge, UK pp. 1–21.
Warnicke, Camilla , and Sarah Granberg . (2022). Interpreter-mediated interactions between people using a signed respective spoken language across distances in real time: a scoping review. *BMC Health Services Research* 22.1 : 387.
Ahmed, M.A. , Zaidan, B.B. , Zaidan, A.A. et al. (2021). Real-time sign language framework based on wearable device: analysis of MSL, DataGlove, and gesture recognition. *Soft Comput* 25, 11101–11122.
Jyotishman Bora , Saine Dehingia , Abhijit Boruah , Anuraag Anuj Chetia , Dikhit Gogoi , (2023). Real-time assamese sign language recognition using mediapipe and deep learning, *Procedia Computer Science*, Volume 218, , Pages 1384-1393.
Podder, K.K. ; Chowdhury, M.E.H. ; Tahir, A.M. ; Mahbub, Z.B. ; Khandakar, A. ; Hossain, M.S. ; Kadir, M.A. (2022). Bangla Sign Language (BdSL) alphabets and numerals classification using a deep learning model. *Sensors 22*, 574.
Wang, H. ; Wang, Z. ; Du, M. ; Yang, F. ; Zhang, Z. ; Ding, S. ; Mardziel, P. ; Hu, X. (2019). Score-CAM: Score-weighted visual explanations for convolutional neural networks. *arXiv* 2019.
Omeiza, D. ; Speakman, S. ; Cintas, C. ; Weldermariam, K. (2019). Smooth Grad-CAM++: An Enhanced Inference Level Visualization Technique for Deep Convolutional Neural Network Models. *arXiv*.
Roy, P. ; Uddin, S.M.M. ; Rahman, M.A. ; Rahman, M.M. ; Alam, M.S. ; Rashid Mahin, M.S. (3–5 May 2019). Bangla sign language conversation interpreter using image processing. In Proceedings of the 2019 1st International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT), Dhaka, Bangladesh, ; pp. 1–5.

Zhao, Kai , et al. (2021). Real-time sign language recognition based on video stream. *International Journal of Systems, Control and Communications* 12.2 : 158-174.
Acharya A. , Patil N. , Pathak U. and Bhagwat S. (2024). Sign Language Translation with fusion of Emotion Detection, *2024 8th International Conference on Computing, Communication, Control and Automation (ICCUBEA)*, Pune, India, 2024, pp. 1-6.
Papatsimouli, M. ; Sarigiannidis, P. ; Fragulis, G.F. (2023). A survey of advancements in real-time sign language translators: Integration with IoT technology. *Technologies*, *11*, 83.

Simulation based quantitative performance evaluation of unified power quality conditioner under sag, swell and harmonics

Vinod Khadkikar , (May 2012), Enhancing electric power quality using UPQC: A comprehensive overview in *IEEE transactions on Power Electronics*, vol.27, no.5, pp.228420132297.
Kwan K.H. , P.L. So , and Y.C. Chu , (November 2012). An output regulation-based unified power quality conditioner with kalman filters in *IEEE Transactions on Industrial Electronics*, vol. 59, NO. 11, pp.4248–4262.
Fujita H. and H. Akagi , (Mar. 1998). The unified power quality conditioner: The integration of series and shunt-active filters, *IEEE Trans. Power Electron.*, vol. 13, no. 2, pp. 315–322.
Axente L. , N.G. Jayanti , M. Basu and M.F. Conlon . (June 2010). A 12 kVA DSP- controlled laboratory prototype UPQC capable of mitigating unbalance in source voltage and load current, *IEEE Trans. Power Electronics* , vol.25, no. 6, pp.1471–1479,
Hinorani N.G. and L. Gyugyi , (2000). *Understanding FACTS: Concepts and Technology of Flexible AC Transmission Systems*. New York: IEEE Press.
Angelo Baggini , (2008). *Handbook of Power Quality*, John Wiley & Sons Ltd.
Ankush Malhar and Parag Nijhawan , (July-2013). Improvement of power quality of distribution network with DTC Drive Using UPQC, *International Journal of Emerging Trends in Electrical and Electronics (IJETEE ISSN: 2320–9569)*, Vol.5, No.2.
Rezaeipour R. and A. Kazemi . (2008). Review of novel control strategies for UPQC , *Int. J. Elec. Power Eng.*, vol.2, pp.241–247.
Karanki S.B. , Geddada N. , Mishra M.K. and Kumar B.K. (September 2013). A Modified Three-Phase Four-Wire UPQC Topology With Reduced DC-Link Voltage Rating, *IEEE Transactions on Industrial Electronics,* Vol. No. 60, Issue No. 9.
Ye Y. , Kazerani M. , and Quintana V. (May 2003). Modeling, control and implementation of three-phase PWM converters, *IEEE Trans. Power Electron.*, vol. 18, no. 3, pp. 857–864.
Kumar S.V.R. and Nagaraju S.S. (Jun. 2007). Simulation of DSTATCOM and DVR in power systems, *ARPN J. Eng. Appl. Sci.*, vol. 2, no. 3, pp. 7–13.
Priyadarshini, M.S. , Bajaj, M. and Zaitsev, I. , (2025). Energy feature extraction and visualization of voltage sags using wavelet packet analysis for enhanced power quality monitoring, *Sci Rep* 15, 2226. https://doi.org/10.1038/s41598-025-86126-4
Priyadarshini, M.S. , Bajaj, M. , Prokop, L , Milkias Berhanu . (2024). Perception of power quality disturbances using Fourier, Short-Time Fourier, continuous and discrete wavelet transforms. *Sci Rep* 14, 3443. https://doi.org/10.1038/s41598-024-53792-9
Priyadarshini M.S. , D. Krishna , Kurakula Vimala Kumar , K. Amaresh , B. Srikanth Goud , Mohit Bajaj , Torki Altameem , Walid El-Shafai , and Mostafa M. Fouda , (February, 2023). Significance of harmonic filters by computation of short-time fourier transform-based time–frequency representation of supply voltage. *Energies* 16, No.5, 2194, https://doi.org/10.3390/en16052194
Priyadarshini M.S. , Mohit Bajaj , Shwetank Avikal and Pradeep Vishnuram , (2024). Conception of Voltage Interruption Signal using Continuous Wavelet, Discrete Wavelet, and Wavelet Packet Analysis, *E3S Web Conf.*, 564, 07001, https://doi.org/10.1051/e3sconf/202456407001
Priyadarshini M.S. , D. Krishna , M.B. Reddy , A. Bhatt , M. Bajaj and M.M. Mahmoud , (2023). Continuous wavelet transform based visualization of transient and short duration voltage variations, *2023 4th IEEE Global Conference for Advancement in Technology (GCAT)*, Bangalore, India, pp. 1–6, doi: 10.1109/GCAT59970.2023.10353457.
Priyadarshini Sumalatha Madur , Sushama Malaji , Raju Kuruva ; (11 September 2023). Wavelet transform based statistical feature extraction of power quality disturbances. *AIP Conf. Proc.* 2755 (1): 020012. https://doi.org/10.1063/5.0148333
Priyadarshini M.S. , Sravani A. , Gochhait S. , Bhatt A. , Bajaj M. and Mahmoud M.M. (2023). IoT platform-based prototype model of an adaptive and intelligent traffic lighting system, *2023 4th IEEE Global Conference for Advancement in Technology (GCAT)*, Bangalore, India, pp. 1–6, doi: 10.1109/GCAT59970.2023.10353407.

Kuruva Raju , M.S. Priyadarshini , Anjas Asrani , Mohit Bajaj , (2024). '*Optimizing Solar Panel Cooling: A Smart Approach using Arduino and IoT Integration*, E3S Web Conf. 591 07003. DOI: 10.1051/e3sconf/202459107003.

Priyadarshini M.S. and M. Sushama , Classification of short-duration voltage variations using wavelet decomposition based entropy criteria, *2016 International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET)*, Chennai, India, 2016, pp. 2192–2196, doi: 10.1109/WiSPNET.2016.7566531

Priyadarshini, M.S. , Sushama, M. , Performance of Static VAR Compensator for Changes in Voltage Due to Sag and Swell. in *Innovations in Electrical and Electronics Engineering, Lecture Notes in Electrical Engineering*, Vol 626. Springer, Singapore. https://doi.org/10.1007/978-981-15-2256-7_22

Hysa A. , M.S. Priyadarshini , M.M. Mahmoud , (2025). Numerical Solution of the System of Non-Linear Differential Equations of the Three-Body Problem in a Special Case, *European Modern Studies Journal*, vol. 9, no. 1, pp. 60–74, https://doi.org/10.59573/EMSJ.9(1).2025.6

Hysa A. , M.M. Mahmoud , A.M. Ewias , (2025). An investigation of the output characteristics of photovoltaic cells using iterative techniques and MATLAB® 2024a Software, *Control Systems and Optimization Letters*, Vol. 3, No 1, pp. 46–52, http://dx.doi.org/10.59247/csol.v3i1.174.

Hysa, A. , Ajazi, E , The performance of photovoltaic cells for different values of physical parameters. BSHN (UT) 28/2019, *Journal of Natural Sciences*, pp. 39–48, ISSN: 2305-882X, https://jns.edu.al/wp-content/uploads/2023/08/6_Azem_Hysa_Envisa_Ajazi_6c168784aa.pdf

Hysa A. (2019). Modeling and simulation of the photovoltaic cells for different values of physical and environmental parameters, *Emerging Science Journal*, vol. 3, no. 6, pp. 395–406, https://doi.org/10.28991/esj-2019-01202

Effect of silane surface treatment on interlaminar failure of aged glass fiber-pet core sandwich composite

Lies Banowati , Putu UdawanPertama . (2023). Impact properties of hemp natural – glass fibers hybrid polypropylene sandwich composites, *Indonesian Journal of Applied Research*, Vol.4, Issue 2, 159–169.

Norman Osa-Uwagboe , Vadim V Silberschimdt , Adedeji Aremi , Emrah Demirci , (2023). Mechanical behaviour of fabric-reinforced plastic sandwich structure: A stae of the art review, *Journal of Sandwich Structures & Materials*, Vol.25 (5), 591–622.

Pietro Mazzuca , (2024). Flexural behaviour of GFRP sandwich panels with eco-friendly PET foam core for the rehabilitation of building floors, *Structures*, Vol 60, 105815.

Qihong Jiang , Guiyong Chen , Abhideep Kumar , Andrew Mills , Krutarth Jani , Vasudevan Rajamohan . (2020). Sustainable sandwich composites manufactured from recycled carbon fibers, flax fibers/PP Skins, and Recycled PET Core, *Journal of Composite Science*.

Hassan Alshahrani , Azzam Ahmed , Hashim Kabrein , V.R. Arunprakash , (2022). Mechanical properties study on sandwich composites of Glass Fiber Reinforced Plastics (GFRP) Using Liquid Thermoplastic, *Journal of Coatings*.

Adib Bin Rashid , Mahima Haque , S M Mohaimenul Islam , K.M. Rafi Uddin Labib . (2024). Nanotechnology-enhanced fiber-reinforced polymer composites: Recent advancements on processing techniques and applications, *Heliyon*, Vol 10, Issue 2, 30 , e24692.

Hassan Alshahrani , Azzam Ahmed , Hashim Kabrein , V.R. Arunprakash , (2022). Mechanical properties study on sandwich composites of glass fiber reinforced plastics (GFRP) using liquid thermoplastic, *Journal of Coatings*.

Melis Eldem Heper and Sennur Deniz , (2020). Mechanical properties of continuous glass fiber/pet composites, *J.IndianChem.Soc.*, 6th ICNTC Special issue, Vol 97.

Vijaya Ramnath B. , K. Alagarraja , C. Elanchezhian , (2019). Review on sandwich composite and their applications, *Material today Proceedings* 16, 859–864.

Ana C Cadore-Rodrigues , Luís F Guilardi , Vinicius F Wandscher , Gabriel K R Pereira , Luiz F Valandro , Marília P Rippe , (2020). Surface treatments of a glass-fiber reinforced composite:Effect on the adhesion to a composite resin, *Journal of Prosthodontic Research*, Volume 64, Issue 3, Pages 301–306.

Narrahim Abu Bakar , M.T.H. Sultan , Mohd Edyazuan Azni , Ahmad Hamdan Ariffin , (2019). Investigation of the mechanical Properties of Napier grass reinforced composites for the aerospace industry, *Durability and Life Prediction in Biocomposites, Fiber-Reinforced Composites and Hybrid Composites*, P.No 321–334.

Mengfan Jing , Junjin Che , Shuman Xu , Zhenwei Liu , Qiang Fu . (2017). The effect of surface modification of glass fiber on the performance of poly (lactic acid) composites: grapheme oxide vs.silane coupling agents, *Applied surface science APSUSC 37716*, P.No:1–24.

Fiore V. , Scalici T. , Dibella G. , Valenza A. , (2014). A review on basalt fiber and its composites Composites Part B S1359-8368 (15)00006-2.
Azmi M.A. , Abdullah H.Z. , Idris M.I. (July 2013). Properties of polyurethane foam/coconut coir fiber as a core material and as a sandwich composites component, *International conference on Mechanical Engineering Research*, University Malaysia,Pahang. P.No.1–7.
Soo-Jin Park 1, Joong-Seong Jin , (2001). Effect of silane coupling agent on interphase and performance of glass fibers/unsaturated polyester composites *Journal of Colloid and Interface Science*, Volume 242, Issue 1, Pages 174–179.
Sathishkumar TP , S Satheeshkumar , J Naveen , (2014). Glass fiber-reinforced polymer composites – a review *Journal of Reinforced Plastics and Composites*, Volume 33, Issue 13.
Magdi El-Messiry , Shaimaa El-Tarfawy , Rania El Deeb , (2017). Enhanced impact properties of cementitious composites reinforced with pultruded flax/polymeric matrix fabric *Alexandria Engineering Journal*, Volume 56, Issue 3, Pages 297–307
Yingqiang Cai , Xiaolong Wang , Fenglin Ouyang , Qinglin Chen , Zhaoyi Zhu , Kuan Fan , Fan Ding , (2024). Study on the mechanical properties of a carbon-fiber/glassfiber hybrid foam sandwich structure *Materials*, 17 (9).
Anjang A. , V.S. Chevali , B.Y. Lattimer , S.W. Case , S. Feih , A.P. Mouritz , (2015). Post-fire mechanical properties of sandwich composite structures, *Composite Structures*, Volume 132, Pages 1019–1028.
Vivek Patekar , Kishor Kale , (2022). State of the art review on mechanical properties of sandwich composite structures, *Polymer Composites*.
Al-Furjan M.S.H. , Shan L. , Shen X. , Zarei M.S. , Hajmohammad M.H. , Kolahchi R. (2022). A review on fabrication techniques and tensile properties of glass, carbon, and Kevlar fiber reinforced rolymer composites. *Journal of Materials Research and Technology*, Volume 19, Pages 2930–2959.
Vemanaboina H , Kunduru KR , Kumar PK , Goud RR , Gowd GH (2024). Mechanical properties of CO2 laser beam butt-welded plates of Hastelloy c-276. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*. :09544089241239620.
Vemanaboina H , Venugopal C , Kotthinti NK (2021). Thermal and mechanical analysis of multipass SS316L using GTAW process. *Materials Today: Proceedings*. 46:562–6.
Reddy KS , Vemanaboina H , Naidu BV , Yelamasetti B , Bridjesh P , Shelare SD (2023). Minimizing Distortion in Multi-Pass GTAW Welding of SS316L Structures: A Taguchi Approach. *International Journal on Interactive Design and Manufacturing (IJIDeM)*.:1–8.
Vemanaboina H , Ananda KE , Majid MSA , Naidu BVV , Pugazhenthi R. (2023). Influence of pre-heating technique on the titanium alloy for machinability using mill insert. *AIP Conference Proceedings.*
Yelamasetti, Balram , Jayaprakash Sharma Panchagnula , Ankammarao Padamurthy , Harinadh Vemanaboina , Chander Prakash , and Prabhu Paramasivam . (2024). Microstructure and Mechanical Analysis of SS321 in CO2 Laser Beam Welding Joint. *The International Journal of Advanced Manufacturing Technology* 135, no. 11–12: 5861–74. https://doi.org/10.1007/s00170-024-14850-8.
Kumar R , Bairwa KN , Vemanaboina H , Naidu BV , Shoush KA , Pushkarna M , et al. (2024). Enhancing wear resistance of aluminum 6061 composites with fly ash: A sustainable approach for industrial applications. *Advances in Mechanical Engineering*. 16(10). http://dx.doi.org/10.1177/16878132241290913
Kumar P , Sudhakar Uppalapati , Omprakash B , Raj Kumar , Harinadh Vemanaboina , Prabhu Paramasivam , and Abinet Gosaye Ayanie . (2025). Mechanical and metallurgical behavior of ER4043-AlN Composite by Wire Arc Additive Manufactured. *AIP Advances* 15, no. 5. https://doi.org/10.1063/5.0255700.
Veera Raghavulu K , Sharma PJ , Kumar PK , Gangisetty N , Vemanaboina H , Prakash C. (2025). Residual stresses and microstructure analysis of SS316L impeller part using selective laser melting: simulation and experimental validation. *International Journal on Interactive Design and Manufacturing (IJIDeM)*. http://dx.doi.org/10.1007/s12008-025-02333-3

High temperature thermo mechanical treatment of CORTEN – IRS-M41–97 Steel by Equal Channel Angular Rolling Process

Alexandrov, I.V. , Serebryany, V.N. , Sarvarova, L.N. , Alexandrova, M.V. , Valiev, R.Z. , (1997). Texture and Young's modulus anisotropy in nanostuctured copper. *Texture Microstruct*. 32, 321–339.
ASM Handbook , vol. 2., 10th ed, pp. 265–346.
Chen, Z.H. , Cheng, Y.Q. , Xia, W.J. , (2007). Effect of equal-channel angular rolling pass on microstructure and properties of magnesium alloy sheets. Mater. Manuf. Process. 22, 51–56.
Cheng, Y.Q. , Chen, Z.H. , Xia, W.J. , Zhou, T. , (2007). Effect of channel clearance on crystal orientation development in AZ31 magnesium alloy sheet produced by equal channel angular rolling. *J. Mater. Process. Technol.* 184, 97–101.

Dalla Torre, F. , Lapovok, R. , Sandlin, J. , Thomson, P.F. , Davies, C.H.J. , Pereloma, E.V. , (2004). Microstructures and properties of copper processed by equal channel angular extrusion for 1–16 passes. *Acta Mater.* 52, 4819–4832.

Han, B.Q. , Langdon, T.G. , (2005). Improving the high-temperature mechanical properties of a magnesium alloy by equal-channel angular pressing. *Mater. Sci. Eng. A* 410–411, 435–438.

Han, J. , Seok, H. , Chung, Y. , Shin, M. , Lee, J. , (2002). Texture evolution of the strip cast 1050 Al alloy processed by continuous confined strip shearing and its formability evaluation. *Mater. Sci. Eng. A* 323, 342–347.

Han, W.Z. , Wu, S.D. , Li, S.X. , Wang, Y.D. , (2008). Intermediate annealing of pure copper during cyclic equal channel angular pressing. *Mater. Sci. Eng. A* 483–484, 430–432.

Horita, Z. , Fujinami, T. , Nemoto, M. , Langdom, T.G. , (2001). Improvement ofmechanical properties for Al alloys using equal channel angular pressing. *J. Mater. Process. Technol.* 117, 288–292.

Hosseini, S.A. , Daneshmanesh, H. , (2009). High strength, high conductivity ultrafine grains commercial pure copper produced by ARB process. *Mater. Des.* 30, 2911–2918.

Jianqiang, B.J. , Kangning, S. , Rui, L. , Runhua, F. , Sumei, W. , (2008). Effect of ECAP pass number on mechanical properties of 2Al2 Al alloy. *J. Wuhan Univ. Technol.*, 71–74.

Jin, Y.H. , Huh, M.Y. , Chung, Y.H. , (2004). Evolution of textures and microstructures in IF-steel sheets during continuous confined strip shearing and subsequent recrystallization annealing. *J. Mater. Sci.* 39, 5311–5314.

Kim, Y.G. , Hwang, B. , Lee, S. , Lee, C.W. , Shin, D.H. , (2009). Dynamic deformation and fracture behavior of ultra-fine grain copper fabricated by equal channel angular pressing. *Mater. Sci. Eng. A* 504, 163–168.

Kim, H.S. , Estrin, Y. , (2001). Ductility of ultrafine grained copper. *Appl. Phys. Lett.* 79, 4115–4117.

Koch, C.C. , (1999). Nanostructure science and technology. Loyola College, Maryland, pp. 95–99.

Lee, J. , Suh, J. , Ahn, J. , (2003). Work-softening behavior of the ultrafine-grained Al alloy processed by high-strain-rate, dissimilar-channel angular pressing. *Metall. Mater. Trans.* A 34, 625–632.

Lee, J.C. , Seok, H.K. , Han, J.H. , Chung, Y.H. , (2001). Controlling the textures of the metal strips via the continuous confined strip shearing (C2S2) process. *Mater. Res. Bull.* 36, 997–1004.

Park, J.W. , Kim, J.W. , Chung, Y.H. , (2004). Grain refinement of steel plate by continuous equal-channel angular process. *Scripta Mater.* 51, 181–184.

Rusz, S. , Greger, M. , Cizek, L. , Dobrzanski, L.A. , (2005).Mathematical modeling for ECAP technology of multiple forming. In: *13th International Scientific Conference on Achievements in Mechanical and Materials Engineering* , pp. 559–564.

Shaarbaf, M. , Toroghinejad, M.R. , (2008). Nano-grained copper strip produced by accumulative roll bonding process. *Mater. Sci. Eng.* A 473, 28–33.

Tamimi, S. , Ketabchi, M. , Parvin, N. , (2009). Microstructural evolution and mechanical properties of accumulative roll bonded interstitial free steel. *Mater. Des.* 30, 2556–2562.

Wang, K. , Tao, N.R. , Liu, G. , Lu, J. , Lu, K. , (2006). Plastic strain-induced grain refinement at the nanometer scale in copper. *Acta Mater.* 54, 5281–5291.

Wang, Y.M. , Ma, E. , (2004). Three strategies to achieve uniform tensile deformation in a nanostructured metal. *Acta Mater.* 52, 1699–1709.

P, Kumar , Sudhakar Uppalapati , Omprakash B , Raj Kumar , Harinadh Vemanaboina , Prabhu Paramasivam , and Abinet Gosaye Ayanie . (2025). “Mechanical and metallurgical behavior of ER4043-AlN composite by wire arc additive manufactured.” *AIP Advances* 15, no. 5 https://doi.org/10.1063/5.0255700.

Vemanaboina H , Padamurthy A , Gandla PK , Muppa LR , Lakshmi Kala K. (2024). Microstructure, wear and residual stresses of selective laser melting AlSi10Mg solid cylinder. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering* ; http://dx.doi.org/10.1177/09544089241272825

Vemanaboina, Harinadh , Krishnamohan Reddy Kunduru , Panchagnula Kishore Kumar , R Raman Goud , and G Harinath Gowd . (2024). “Mechanical properties of CO2 laser beam butt-welded plates of hastelloy c-276.” *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*. https://doi.org/10.1177/09544089241239620.

Vemanaboina, Harinadh , Chittemsetty Venugopal , and Nagendra Kumar Kotthinti . (2021). “Thermal and mechanical analysis of multipass SS316L using GTAW process.” *Materials Today: Proceedings* 46 : 562–66. https://doi.org/10.1016/j.matpr.2020.11.284.

Vemanaboina, Harinadh , Nagendra Kumar Kotthinti , and Venugopal Chittemsetty . (2021). “Multipass dissimilar joints for SS316L to Inconel625 using gas tungsten arc welding.” *Materials Today: Proceedings* 46 : 567–71. https://doi.org/10.1016/j.matpr.2020.11.287.

Panchagnula JS , Kunduru KR , Rao KVNVN , Vemanaboina H , Gowd GH , Paramasivam P , et al. (2024). Microstructure and residual stress distribution of dissimilar joints of SS321 to Hastelloy C-276 using CO2 Laser Beam Welding: An experimental validation. AIP Advances. 14(12). http://dx.doi.org/10.1063/5.0222415.

Uppalapati, Sudhakar , Jayaprakash Sharma Panchagnula , Vishnu Vardhana Naidu B. , Harinadh Vemanaboina , Prabhu Paramasivam , and Mohamed Yusuf . (2025). “Thermally induced residual stresses in SS321 welded joints using CO2 laser beam: FEA and experimental study.” *AIP Advances* 15, no. 6. https://doi.org/10.1063/5.0257720.

Mechanical and material characterization of reinforced Al-7075 MMC/Hybrid composites. A critical review

Rajendra, S.K. , and C.M. Ramesha . (2015). A survey of Al7075 aluminium metal matrix composites. *International Journal of Science and Research* 4: 1071–1075.

Saravanan, C. , K. Subramanian , V. Ananda Krishnan , and R. Sankara Narayanan . (2015). Effect of particulate reinforced aluminium metal matrix composite–a review. *Mechanics and Mechanical Engineering* 19, no. 1: 23–30.

Sambathkumar, M. , P. Navaneethakrishnan , K.S.K.S. Ponappa , and K.S.K. Sasikumar . (2017). Mechanical and corrosion behavior of Al7075 (hybrid) metal matrix composites by two step stir casting process. *Latin american journal of solids and structures* 14: 243–255.

Subramaniam, Balasubramani , Balaji Natarajan , Balasubramanian Kaliyaperumal , and Samson Jerold Samuel Chelladurai . (2018). Investigation on mechanical properties of aluminium 7075-boron carbide-coconut shell fly ash reinforced hybrid metal matrix composites. *China Foundry* 15: 449–456.

Pradeep Devaneyan, S. , R. Ganesh , and T. Senthilvelan . (2017). On the mechanical properties of hybrid aluminium 7075 matrix composite material reinforced with SiC and TiC produced by powder metallurgy method. *Indian Journal of Materials Science* 2017.

Prasad, T. , P. Chinna Sreenivas Rao , and B. Vijay Kiran . Investigation of Mechanical Properties of Al 7075 with Magnesium oxide Nano Powder Mmc. *IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE)* : 60–65.

Shrivastava , Anil K. , Kalyan K. Singh , and Amit R. Dixit . (2018). Tribological properties of Al 7075 alloy and Al 7075 metal matrix composite reinforced with SiC, sliding under dry, oil lubricated, and inert gas environments. *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology* 232, no. 6: 693–698.

Raturi, Amit , K.K.S. Mer , and Pawan Kumar Pant . (2017). Synthesis and characterization of mechanical, tribological and micro structural behaviour of Al 7075 matrix reinforced with nano Al2O3 particles. *Materials Today: Proceedings* 4, no. 2: 2645–2658.

Pramod, R. , GB Veeresh Kumar , PS Shivakumar Gouda , and Arun Tom Mathew . (2018). A study on the Al2O3 reinforced Al7075 metal matrix composites wear behavior using artificial neural networks. *Materials Today: Proceedings* 5, no. 5: 11376–11385.

Das, Diptikanta , Milind Sharma , Chandrika Samal , and Ramesh Kumar Nayak . (2019). Investigation of mechanical properties of SiCp reinforced Al 7075 metal matrix composites: a case study. *Materials Today: Proceedings* 18: 3958–3965.

Singla, Manoj , D. Deepak Dwivedi , Lakhvir Singh , and Vikas Chawla . (2009). Development of aluminium based silicon carbide particulate metal matrix composite. *Journal of Minerals and Materials Characterization and Engineering* 8, no. 06 : 455.

Sri, Chandana , S. Saravanamurugan , A. Shanmugasundaram , and Subinaya Mohapatra . (2021). Effect of SiC and Gr particles on the mechanical properties and dynamic characteristics of AA 7075 hybrid metal matrix composite. *Materials Today: Proceedings* 46: 390–398.

Sridhar, Atla , and K. Prasanna Lakshmi . (2021). Evaluation of mechanical and wear properties of aluminum 7075 alloy hybrid nanocomposites with the additions of SiC/Graphite. *Materials Today: Proceedings* 44 : 2653–2657.

Hariharan, V. , P. Mohankumar , and A. Gnaneswaran . (2014). A review on tribological and mechanical behaviors of aluminium metal matrix composites. *Int. J. Mech. Eng. Rob.(IJMER)* 2, no. 6 .

Muniamuthu, Sumathy , Naga Lingeswara Raju , S. Sathishkumar , and K. Sunil Kumar . (2016). Investigation on mechanical properties of Al 7075-Al2O3 metal matrix composite. *International Journal of Mechanical Engineering and Technology* 7, no. 6 .

Baradeswaran, A. , and A. Elaya Perumal . (2014). Study on mechanical and wear properties of Al 7075/Al2O3/graphite hybrid composites. *Composites Part B: Engineering* 56: 464–471.

Kumar, Ashiwani , Virendra Kumar , Anil Kumar , Binayaka Nahak , and Rajesh Singh . (2021). Investigation of mechanical and tribological performance of marble dust 7075 aluminium alloy composites. *Materials Today: Proceedings* 44: 4542–4547.

Singh, A.K. , Soni, S. , Rana, R.S. , Kumar, A. , Chandra, G. , Singh, R.K. and Kumar, A. , (2023). Wear and frictional attributes of Al-alloy hybrid composite dispersed with hard-ceramic (ZrO2) and solid-lubricant (Gr)

particles. *Journal of Dispersion Science and Technology*, pp.1–15.
Arya, R.K. , Kumar, R. and Telang, A. , (2023). Influence of microstructure on tribological behaviors of Al6061 metal matrix composite reinforced with silicon nitride (Si3N4) and silicon carbide (SiC) micro particles. *Silicon*, *15*(9), pp.3987–4001
Arya RK , Telang A. (2020). Silicon nitride as a reinforcement for aluminium metal matrix composites to enhance microstructural, mechanical and tribological behavior. *International Journal of Engineering and Advanced Technology*;9(3):3366–74.
Arya RK , Kumar R , Telang A , Yadav AS (2023 Sep). Effect of microstructure on mechanical behaviors of Al6061 metal matrix composite reinforced with Silicon Nitride (Si3N4) and Silicon Carbide (SiC) Micro Particles. Silicon. ;15(14):5911–23.
Manoj Singla , D. Deepak Dwivedi , Lakhvir Singh , Vikas Chawla (2009). Development of aluminium based silicon carbide particulate metal matrix composite, *Journal of Minerals & Materials Characterization & Engineering*, Vol. 8, No.6, pp. 455–467, jmmce.org.
Koria C , Kumar R , Chauhan PS , Purohit R , Banoriya D. (2025 Jul). The role of composites in lightweight engineering materials: a multi-scale analysis. *Advances in Materials and Processing Technologies*. 12:1–3.
Singh VP , Kumar A , Kumar R , Modi A , Kumar D , Mahesh V , Kuriachen B. (2024 Apr). Effect of rotational speed on mechanical, microstructure, and residual stress behaviour of AA6061-T6 alloy joints through friction stir welding. *Journal of Materials Engineering and Performance*. ;33(8):3706–21.
Manohar G , Kumar A , Satyanarayana MV , Maity SR , Pandey KM , Reddy V , Mahammod BP (2023 Dec 1). Effect of fabrication techniques on mechanical and microstructural behavior of AA7075/SiC/ZrC hybrid composite. *Ceramics International*;49(23):37782–92.
Kumaraswamy J , Anil KC , Veena TR , Reddy M , Sunil Kumar K. (2025 Mar 15). Influence of particulates on microstructure, Mechanical and Fractured behaviour on Al-7075 alloy composite by FEA. *Australian Journal of Mechanical Engineering*;23(2):248–62.
Konduru, J. , Kumar, G.R. , Reddy, G.V. , Ahilan, C. , Rajesh, R. , Vemanaboina, H. , & Goud, R.R. (2023). An experimental investigation and comparison of mechanical properties of Al7075-SiC-Al2O3-Zro2 composites of automotive applications. *International Conference On Sustainable Materials Science, Structures, And Manufacturing*, 2869, 020008. https://doi.org/10.1063/5.0172793
Venkatrao, S. , Vinod, B. , Baburao, P. , Ravindraiah, R. , Vemanaboina, H. , & Paramasivam, P. (2024). Assessment of mechanical and tribological behavior of Mg-4Zn-1RE-0.7Zr alloy: Novel mixture of Si3N4/TiC/MoS2 utilizing casting technique. Composites and Advanced Materials, 33. https://doi.org/10.1177/26349833241279311
Gopal, P.M. , Kavimani, V. , Sudhagar, S. , Barik, D. , Paramasivam, P. , & Vemanaboina, H. (2024). Enhancing WEDM performance on Mg/FeCoCrNiMn HEA composites through ANN and entropy integrated COCOSO optimization. AIP Advances, 14(9). https://doi.org/10.1063/5.0226558
Kumar, R. , Bairwa, K.N. , Vemanaboina, H. , Naidu, B.V. , Shoush, K.A. , Pushkarna, M. , Tuka, M.B. , & Ghoneim, S.S. (2024). Enhancing wear resistance of aluminum 6061 composites with fly ash: A sustainable approach for industrial applications. Advances in Mechanical Engineering, 16(10). https://doi.org/10.1177/16878132241290913
Reddy, C.V.B. , Jawahar, S. , Vemanaboina, H. , & Goud, R.R. (2023). Evaluating the thermal properties and wear behaviour of Al7075-Mica-Kaolinite mixed hybrid metal matrix composite. International Conference On Sustainable Materials Science, Structures, And Manufacturing, 2869, 020002. https://doi.org/10.1063/5.0168239
Vemanaboina, H. , Padamurthy, A. , Gandla, P.K. , Muppa, L.R. , & Lakshmi Kala, K. (2024). Microstructure, wear and residual stresses of selective laser melting AlSi10Mg solid cylinder. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering. https://doi.org/10.1177/09544089241272825
P, K., Uppalapati, S. , B, O., Kumar, R. , Vemanaboina, H. , Paramasivam, P. , & Ayanie, A.G. (2025). Mechanical and metallurgical behavior of ER4043-AlN composite by wire arc additive manufactured. AIP Advances, 15(5). https://doi.org/10.1063/5.0255700

Tribological and mechanical behavior of nano carbide free bainite high strength steel. A critical review

Yoozbashi MN , Yazdani S. (2010). Mechanical properties of nanostructured, low temperature bainitic steel designed using a thermodynamic model. *Materials Science and Engineering: A*. ;527(13-14):3200-5.
Zackay VF , Parker ER , Fahr D , Busch R. (1967). The enhancement of ductility in high-strength steels. *ASM Trans Quart*; 60(2):252-9.

Nie W , Wang X , Wu S , Guan H , Shang C. (2012). Stress-strain behavior of multi-phase high performance structural steel. *Science China Technological Sciences*;55:1791-6.
Tomota Y , Tokuda H , Adachi Y , Wakita M , Minakawa N , Moriai A , Morii Y. (2004). Tensile behavior of TRIP-aided multi-phase steels studied by in situ neutron diffraction. *Acta Materialia*;52(20):5737-45.
Shen YF , Liu YD , Sun X , Wang YD , Zuo L , Misra RD (2013). Improved ductility of a transformation-induced-plasticity steel by nanoscale austenite lamellae. *Materials Science and Engineering: A*.;583:1-0.
Zhou W , Guo H , Xie Z , Wang X , Shang C. (2013). High strength low-carbon alloyed steel with good ductility by combining the retained austenite and nano-sized precipitates. *Materials Science and Engineering: A*.;587:365-71.
Mates SP , Vax E , Rhorer RR , Stoudt MR (2020). Dynamic flow stress behavior of hypo-eutectoid ferrite-pearlite steels under rapid heating. *Journal of Dynamic Behavior of Materials* :246-65.
Asadabad MA , Goodarzi M , Kheirandish S. (2008). Kinetics of austenite formation in dual phase steels. *ISIJ International*;48(9):1251-5.
Matsumura O , Sakuma Y , Takechi H. (1987). Enhancement of elongation by retained austenite in intercritical annealed 0.4 C-1.5 Si-O. 8Mn Steel. *Transactions of the Iron and Steel Institute of Japan.* ;27(7):570-9.
Bangaru NR , Sachdev AK (1982). Influence of cooling rate on the microstructure and retained austenite in an intercritically annealed vanadium containing HSLA steel. *Metallurgical Transactions A*.;13:1899-906.
Miihkinen VT , Edmonds DV (1987). Fracture toughness of two experimental high-strength bainitic low-alloy steels containing silicon. *Materials Science and Technology*;3(6):441-9.
Bhadeshia HK Bainite in steels: transformation, microstructure and properties. London: IOM. 2001:237-76.
Myhr OR , Grong Ø. (2000). Modelling of non-isothermal transformations in alloys containing a particle distribution. *Acta Materialia*.;48(7):1605-15.
Matlock DK , Speer JG , De Moor E , Gibbs PJ (2012). Recent developments in advanced high strength sheet steels for automotive applications: An overview. *Jestech*.;15(1):1-2.
Goel NC , Chakravarty JP , Tangri K. (1987). The influence of starting microstructure on the retention and mechanical stability of austenite in an intercritically annealed-low alloy dual-phase steel. *Metallurgical Transactions A*.;18:5-9.
Mark AF , Wang X , Essadiqi E , Embury JD , Boyd JD (2013). Development and characterisation of model TRIP steel microstructures. *Materials Science and Engineering: A*.;576:108-17.
Tan XD , Xu YB , Ponge D , Yang XL , Hu ZP , Peng F , Ju XW , Wu D , Raabe D. (2016). Effect of intercritical deformation on microstructure and mechanical properties of a low-silicon aluminum-added hot-rolled directly quenched and partitioned steel. *Materials Science and Engineering: A*.;656:200-15.
Jacques PJ (2004). Transformation-induced plasticity for high strength formable steels. *Current Opinion in Solid State and Materials Science*;8(3-4):259-65.
Ryu JH , Kim DI , Kim HS , Bhadeshia HK , Suh DW (2010). Strain partitioning and mechanical stability of retained austenite. *Scripta Materialia*.;63(3):297-9.
Yi JJ , Yu KJ , Kim IS , Kim SJ (1983). Role of retained austenite on the deformation of an Fe-0.07 C-1.8 Mn-1.4 Si dual-phase steel. *Metallurgical Transactions A*.;14:1497-504.
Shen, Y.F. ; Qiu, L.N. ; Sun, X. ; Zuo, L. ; Liaw, P.K. ; Raabe, D. (2015). Effects of retained austenite volume fraction, morphology, and carbon content on strength and ductility of nanostructured TRIP-assisted steels. *Mater. Sci. Eng. A*, 636, 551–564.
Zhang, L.F. ; Song, R.B. ; Zhao, C. ; Yang, F. (2015). Work hardening behavior involving the substructural evolution of an austenite–ferrite Fe-Mn-Al-C steel. *Mater. Sci. Eng. A*, 640, 225–234.
Avishan B , Tavakolian M , Yazdani S. (2017). Two-step austempering of high performance steel with nanoscale microstructure. *Mater Sci Eng, A*;693:178–85.
Chakraborty J , Bhattacharjee D , Manna I. (2008). Austempering of bearing steel for improved mechanical properties. *Scripta Mater* ;59(2):247–50.
Chen K , Jiang Z , Liu F , Li H , Kang C , Zhang W , Wang A. (2020). Achievement of high ductility and ultra-high strength of V-Nb micro alloyed spring steel by austempered multiphase microstructure. *Metal Mater Trans*;51(7):3565–75.
Wang X , Zhang X , Fang Q , Ma H , Zhang R , Liu F , Yang Z , Zhang F. (2022). Effect of tempering on stability of retained austenite and tensile properties of nanostructured bainitic steel. *Mater Sci Eng, A*;856.
Suresha B. , Ramesh B.N. , Subbaya K.M. , Ravi Kumar B.N. , Chandramohan G. (2010). Influence of graphite filler on two-body abrasive wear behaviour of carbon fabric reinforced epoxy composites, Mater. 1833–1841
Wang W , Zhang C. , Xu P. , Yasir M. , Liu L. (2015). Enhancement of oxidation and wear resistance of Fe-based amorphous coatings by surface modification of feedstock powders, *Mater. Des.* 73 35–41.
Wu Z , Deng J. , Xing Y. , Cheng H. , Zhao J. (2012). Effect of surface texturing on friction properties of WC/Co cemented carbide, *Mater. Des.* 41, 142–149

Hasan SM , Ghosh M , Chakrabarti D , Singh SB (2020). Development of continuously cooled low-carbon, low-alloy, high strength carbide-free bainitic rail steels. *Materials Science and Engineering: A*.;771:138590.
Franceschi M , Soffritti C , Fortini A , Pezzato L , Garagnani GL , Dabalà M. (2023). Evaluation of wear resistance of a novel carbide-free bainitic steel. *Tribology International*;178:108071.
Konduru, J. , Kumar, G.R. , Reddy, G.V. , Ahilan, C. , Rajesh, R. , Vemanaboina, H. , & Goud, R.R. (2023). An experimental investigation and comparison of mechanical properties of Al7075-SiC-Al2O3-Zro2 composites of automotive applications. *International Conference On Sustainable Materials Science, Structures, And Manufacturing*, 2869, 020008. https://doi.org/10.1063/5.0172793
Venkatrao, S. , Vinod, B. , Baburao, P. , Ravindraiah, R. , Vemanaboina, H. , & Paramasivam, P. (2024). Assessment of mechanical and tribological behavior of Mg-4Zn-1RE-0.7Zr alloy: Novel mixture of Si3N4/TiC/MoS2 utilizing casting technique. *Composites and Advanced Materials*, 33. https://doi.org/10.1177/26349833241279311
Gopal, P.M. , Kavimani, V. , Sudhagar, S. , Barik, D. , Paramasivam, P. , & Vemanaboina, H. (2024). Enhancing WEDM performance on Mg/FeCoCrNiMn HEA composites through ANN and entropy integrated COCOSO optimization. *AIP Advances,* 14(9). https://doi.org/10.1063/5.0226558
Kumar, R. , Bairwa, K.N. , Vemanaboina, H. , Naidu, B.V. , Shoush, K.A. , Pushkarna, M. , Tuka, M.B. , & Ghoneim, S.S. (2024). Enhancing wear resistance of aluminum 6061 composites with fly ash: A sustainable approach for industrial applications. *Advances in Mechanical Engineering*, 16(10). https://doi.org/10.1177/16878132241290913
Reddy, C.V.B. , Jawahar, S. , Vemanaboina, H. , & Goud, R.R. (2023). Evaluating the thermal properties and wear behaviour of Al7075-Mica-Kaolinite mixed hybrid metal matrix composite. *International Conference On Sustainable Materials Science, Structures, And Manufacturing*, 2869, 020002. https://doi.org/10.1063/5.0168239
Vemanaboina, H. , Padamurthy, A. , Gandla, P.K. , Muppa, L.R. , & Lakshmi Kala, K. (2024). Microstructure, wear and residual stresses of selective laser melting AlSi10Mg solid cylinder. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*. https://doi.org/10.1177/09544089241272825
Uppalapati P , K., S., B, O., Kumar, R. , Vemanaboina, H. , Paramasivam, P. , & Ayanie, A.G. (2025). Mechanical and metallurgical behavior of ER4043-AlN composite by wire arc additive manufactured. *AIP Advances*, 15(5). https://doi.org/10.1063/5.0255700

Simulation of SA387 plates butt welded by using SIMUFACT

Arora H. , Singh R. , and Brar G.S. (2019). ‘Thermal and structural modelling of AWprocesses: A literature review’, Meas. Control, vol. 52, no. 7–8, pp. 955–969, doi: 10.1177/0020294019857747.
Choi, J. and Kim, I. , (2023). Estimation of heat source model's parameters for GMAW via Multi-Island genetic algorithm. *Metals*, 10(7), p.885. https://doi.org/10.3390/met10070885
Da Silva, N.N. , and Sade, W. (2024). The Effects of Preheating the Shielding Gas Used in Gas Tungsten Arc Welding. *Welding Journal*, 103(10), 298–307. https://aws-p-001-delivery.sitecorecontenthub.cloud/api/public/content/2024.103.026
Ge, G. , Hu, J. , Huo, Y. , Tang, S. , Liu, Y. , Li, J. , Qi, C. , Wu, H. , and Wang, W. (2024). Effect of heat input on the microstructure and performance of dissimilar welded joint between Q345B low-alloy steel and 2205 duplex stainless steel. *Journal of Materials Research and Technology*, 33, 4858–4874. https://doi.org/10.1016/j.jmrt.2024.10.165
Gery D. , Long H. , and Maropoulos P. (2005). ‘Effects of welding speed, energy input and heat source distribution on temperature variations in butt joint welding’, *J. Mater. Process. Technol.*, vol. 167, no. 2–3, pp. 393–401, doi: 10.1016/j.jmatprotec.2005.06.018.
Goldak J.A. and Akhlaghi M. (2005). Computational welding mechanics. New York: Springer, 2005. ISBN-13: 978-0387232874
Goldak J. , Chakravarti A. , and Bibby M. (1984). ‘A new finite element model for welding heat sources’, *Metall. Trans. B*, vol. 15, no. 2, pp. 299–305, doi: 10.1007/BF02667333.
Kandpal, B.C. , Gupta, D.K. , Kumar, A. , Jaisal, A.K. , Ranjan, A.U. , and Rivastava, A. (2021). Effect of heat treatment on properties and microstructure of steels. *Materials Today: Proceedings*, 44, 199–205. https://doi.org/10.1016/j.matpr.2020.12.533
Kangazian, J. , and Shamanian, M. (2019). Effect of pulsed current on the microstructure, mechanical properties and corrosion behavior of Ni-based alloy/Super Duplex Stainless Steel dissimilar welds. *Transactions of the Indian Institute of Metals,* 72(9), 2403–2416. https://doi.org/10.1007/s12666-019-01693-1
Kim Y.-C. , Hirohata M. and Inose K. (2014). ‘FEM simulation of distortion and residual stress generated by high energy beam welding with considering phase transformation’, *Open J. Met.*, vol. 04, no. 02, pp. 31–39,

doi: 10.4236/ojmetal.2014.42004.

Kumar, S. , Madugula, N.S. , Ravi kumar, N. , Kumar, N. , Giri, J. , and Kanan, M. (2024). An extensive analysis of GTAW process and its influence on the microstructure and mechanical properties of SDSS 2507. *Journal of Materials Research and Technology*, 33, 8675–8686. https://doi.org/10.1016/j.jmrt.2024.11.157

Lee, S. and Park, M. , (2023). An Improved Heat Source Model for FCAW of 9% Nickel Steel for Cryogenic Tanks. *Materials*, 16(20), p.6647. https://doi.org/10.3390/ma16206647

Lee, S. , Kim, J. and Park, H. , (2023). Calibration of heat source models in numerical welding simulations. *Metals*, 14(11), p.1213. https://doi.org/10.3390/met14111213

Liskevych, O. , and Scotti, A. (2015). Determination of the gross heat input in arc welding. *Journal of Materials Processing Technology*, 225, 139–150. https://doi.org/10.1016/j.jmatprotec.2015.06.005

Makaraci M. and Şenol M.T. (2024). Experimental and numerical analysis of temperature distributions in SA 387-Gr.11-Cl.2 steel during submerged arc welding, *High Temperature Materials and Processes*. https://doi.org/10.1515/htmp-2024-0009.

Murugan N. and Parmar R.S. (1994). 'Effects of MIG process parameters on the geometry of the bead in the automatic surfacing of stainless steel', *J. Mater. Process. Technol.*, vol. 41, no. 4, pp. 381–398, doi: 10.1016/0924-0136(94)90003-5.

Panchagnula JS , Kunduru KR , Rao KVNVN , Vemanaboina H , Gowd GH , Paramasivam P , et al. (2024 Dec 1). Microstructure and residual stress distribution of dissimilar joints of SS321 to Hastelloy C-276 using CO2 Laser Beam Welding: An experimental validation. *AIP Advances*;14(12). http://dx.doi.org/10.1063/5.0222415

Rao, G. Surya Prakash , Panchagnula Jayaprakash Sharma , Suresh Akella , Harinadh Vemanaboina , Jasvinder Singh , MVV Prasad Kantipudi , Chander Prakash , Khang Wen Goh , and Dao Thanh Phong . (September 2025). "Modeling and experimental comparison of residual stresses and microstructure in UNS S32507 welds using gas tungsten arc and laser beam welding processes." *Journal of Materials Research and Technology* 38: 782–91. https://doi.org/10.1016/j.jmrt.2025.07.254.

Reddy KS , Purushotham A , Kala KL , Gupta MS , Kumar PK , Vemanaboina H. (2023). Thermal mapping of SS316L experimental and simulation for GTA welding process with moving heat source model using FEA. *International Journal on Interactive Design and Manufacturing (IJIDeM)*.18(5):2755–63. http://dx.doi.org/10.1007/s12008-023-01310-y

Senthilkumar, S. , Manivannan, S. , Venkatesh, R. , and Karthikeyan, M. (2023). Influence of heat input on the mechanical characteristics, corrosion and microstructure of ASTM A36 steel welded by GTAW technique. *Heliyon*, 9(9), e19612. https://doi.org/10.1016/j.heliyon.2023.e19708

Singh, S.R. , and Khanna, P. (2021). A-TIG (activated flux tungsten inert gas) welding – A review. *Materials Today: Proceedings*, 44, 808–820. https://doi.org/10.1016/j.matpr.2020.10.712

Szyndler J. (2023). 'Determination of welding heat source parameters for fem simulation based on temperature history and real bead shape', presented at the Material Forming, May 2023, pp. 159–168. doi: 10.21741/9781644902479-18.

Trupiano S. , Belardi V.G. , Fanelli P. , Gaetani L. , and Vivio F. (2022). 'A semi-analytical method for the calculation of double-ellipsoidal heat source parameters in welding simulation', *IOP Conf. Ser. Mater. Sci. Eng.*, vol. 1214, no. 1, p. 012023, doi: 10.1088/1757-899X/1214/1/012023.

Uppalapati, Sudhakar , Jayaprakash Sharma Panchagnula , Vishnu Vardhana Naidu B. , Harinadh Vemanaboina , Prabhu Paramasivam , and Mohamed Yusuf . (2025). "Thermally induced residual stresses in SS321 welded joints using CO2 Laser Beam: FEA and experimental study." *AIP Advances* 15, no. 6. https://doi.org/10.1063/5.0257720.

Vemanaboina, Harinadh , Balram Yelamasetti , Jayaprakash Sharma Panchagnula , Naveen Kilari , Chander Prakash , Sandeep Kumar , and Husain Mehdi . (2025). "Thermal and mechanical analysis of C-276 alloy using CO2 laser beam welding process." *Transactions of the Indian Institute of Metals* 78, no. 2. https://doi.org/10.1007/s12666-024-03476-9.

Wang Z. , Shang C. , and Wang X. (2025). 'Development of a Finite Element Model for the HAZ Temperature Field in Longitudinal Welding of Pipeline Steel', *Metals*, vol. 15, no. 1, p. 91, doi: 10.3390/met15010091.

Wu C.S. , Hu Q.X. , and Gao J.Q. (2009). 'An adaptive heat source model for finite-element analysis of keyhole plasma arc welding', *Compute. Mater. Sci.*, vol. 46, no. 1, pp. 167–172, doi: 10.1016/j.commatsci.2009.02.018.

Zhang, G. , Shi, Y. , Zhu, M. , and Fan, D. (2022). Effect of electric parameters on weld pool dynamic behavior in GTAW. *Journal of Manufacturing Processes*, 77, 369–379. https://doi.org/10.1016/j.jmapro.2022.03.028

Experimental investigation of steel sheet using incremental hole flanging Process

Kurra Suresh , Regalla, S.P. , (2014). Experimental and numerical studies on formability of extra-deep drawing steel in incremental sheet metal forming. *Journal of Materials Research and Technology* ;3(2):158–171.

Cui, Z. , Gao, L. , Lu, Q.J. , (2008). Application of CNC incremental forming in hole flanging process. *Chinese Journal of Materials for Mechanicl Engineering*, 32(7):5–8.

Cui, Z. , Gao, L. , (2010). Studies on hole flanging process using multistage incremental forming. *CIRP Journal of Manufacturing Science and Technology*;2:124–128.

Petek, A. , Kuzman, K. , (2012). Backward hole-flanging technology using an incremental Approach, *Journal of Mechanical Engineering*;58:73–80.

Centeno, G. , Silva, M.B. , Cristino, V.A.M. , Vallellano, C. , Martins P.A.F. , (2012). Hole flanging by incremental sheet forming. *International Journal of Machine tool Manufacture*; 59: 46–54.

Borrego, M. , Morales Palma, D. , Martínez-Donaire, A.J. , Centeno, G. , Vallellano, C. , (2016). Experimental study of hole-flanging by single-stage incremental sheet forming. *Journal of Materials Processing Technology*;237(1):320–330.

Montanari, L. , Cristino, V.A. , Silva, M.B. , (2012). A new approach for deformation history of material elements in hole-flanging produced by single point incremental forming, *International Journal of Advanced Manufacturing Technology*;212:1573–1590.

Kurra Suresh , Nasih, H.R. , Regalla, S.P. , Gupta, A.K. , (2016). Parametric study and multi-objective optimization in single-point incremental forming of extra deep drawing steel sheets. *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture*, ;230(5):825-837.

Kurra Suresh , Rahman, N.H. , Regalla, S.P. , Gupta, A.K. , (2015). Modeling and optimization of surface roughness in single point incremental forming process. *Journal of Materials Research and Technology* ;4(3):304–313.

Kurra Suresh , Regalla, S.P. , Pérez-Santiago, P. , (2014). Study on influence of process parameters in incremental forming using finite element simulations and taguchi orthogonal array", *17th International Conference on Advances in Materials & Processing Technology (AMPT 2014)*, Atlantis The Palm, Nov. 16-20, Dubai, United Arab Emirates.

Kurra Suresh , Bagade, S.D. , Regalla, S.P. , (2015). Deformation Behavior of Extra Deep Drawing Steel in Single-Point Incremental Forming. *Materials and Manufacturing Processes*, 30(10): 1202–1209.

Praveen, G. , Ram Tarun Reddy , and Kurra Suresh . (2019). "Experimental studies on incremental hole flanging of steel sheets." *Advances in Materials and Processing Technologies*:5(3): 418–428.

Suresh K. (2019). Experimental study on force measurement for AA 1100 sheets formed by incremental forming. *Materials Today: Proceedings*.;18:2738–44.

Padamurthy, A. , Praveen, G. , Kumar, S. , Pati, P.R. , Prasad, V.V.S.H. and Sheelwant, A. , (2023). A review on analytical models for predicting forming force in incremental forming processes. In *AIP Conference Proceedings* (Vol. 2869, No. 1, p. 030017). AIP Publishing LLC.

Strength prediction of self-compacting concrete incorporation of mineral admixtures using response surface methodology

Agrawal V. , Kantipudi M.P. , and J. Jagtap , (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, *Scientific Reports*, vol. 15, p. 17311, 2025. doi: 10.1038/s41598-025-01823-4.

Aïtcin, Pierre-Claude . (2000). High-Performance Concrete. London: E & FN Spon, 2000.

Aluvalu R. , V. Asha , Anandhi R.J. , Prasad Kantipudi M.V.V. , Bali J. , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 189–204, 2024.

Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. *Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy*, July 23, 2025, 1–37. https://doi.org/10.1115/1.4069225.

Bode Venkata Kavyateja and Panga Narasimha Reddy . (2020). Effect of industrial waste on strength properties of concrete. *Annales de Chimie - Science des Matériaux*, 44(5): 353-358; 2020. https://doi.org/10.18280/acsm.440508

Buchade A.C. and Kantipudi M.P. , (2024). Recent Trends on Brain Tumor Detection Using Hybrid Deep Learning Methods, *Revue d'Intelligence Artificielle*, vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.

Choudhary S. , Kandikattu C.H. , Kumar S. , Kantipudi M.P. and Kumar M. , (2024). Enhancing Cybersecurity Through Combined Convolutional Neural Network-Gated Recurrent Unit Approach for Distributed Denial of Service Attack Detection, *2024 1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR)*, Muscat, Oman, pp. 1-6, doi: 10.1109/ICIESTR60916.2024.10798189.

Deepa, N. , S. Dhinakaran , and P.S. Jawahar . (2018). Statistical modeling and optimization of properties of self compacting concrete using response surface methodology. *Construction and Building Materials* 165: 321–329. https://doi.org/10.1016/j.conbuildmat.2017.12.204

Gopal, P.M. , V. Kavimani , S. Sudhagar , Debabrata Barik , Prabhu Paramasivam , and Harinadh Vemanaboina . (2024). Enhancing WEDM Performance on Mg/FeCoCrNiMn HEA Composites through ANN and Entropy Integrated COCOSO Optimization. *AIP Advances* 14, no. 9 (September 1, 2024). https://doi.org/10.1063/5.0226558.

Jabbar M.A. , Kantipudi M.P. , Madureira A.M. , Reaz M.B.I. , and Peng S.-L. , (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.

Jain, Ayushi , Vaibhav Saini , Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework. In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120-133. Cham: Springer Nature Switzerland.

Kantipudi M.P. , Kumar S. , and Jha A.K. , (2021). Scene text recognition based on bidirectional LSTM and deep neural network, *Computational Intelligence and Neuroscience*, vol. 2021, pp. 1–11, Jan. 2021, doi: 10.1155/2021/2676780.

Kavyateja, B.V. , Reddy, P.N. , & Kumar, C.A. (2022). Properties of self-compacting concrete modified with ultrafine slag. *Res. Eng. Struct. Mater*, 8(2), 371-384, 2022. http://dx.doi.org/10.17515/resm2022.362ea1101

Madheswaran, C.K. , K. Gnana Soundara Rajan , and N. Gopalakrishnan . (2013). Application of response surface methodology for optimization of self-compacting concrete with binary and ternary cementitious blends. *Iranian Journal of Science and Technology, Transactions of Civil Engineering* 37(C+): 271–282.

Palanisamy, V. , and S. Kandasamy . (2020). Optimization of self compacting concrete incorporating silica fume and metakaolin using response surface methodology. *Materials Today: Proceedings* 33: 707–712. https://doi.org/10.1016/j.matpr.2020.04.359

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI, *EAI Endorsed Transactions on Pervasive Health and Technology*, vol. 10, Mar. 2024, doi: 10.4108/eetpht.10.5544.

Rafieizonooz, M. , J.P. Balendran , N.B. Ghazali , and H. Mirza . (2016). Compressive strength prediction of sustainable concrete using regression models. *Journal of Cleaner Production* 112: 823–836. https://doi.org/10.1016/j.jclepro.2015.07.041

Ravande, Kishore , S.C. Patil , and S.A. Kulkarni . (2015). Application of response surface methodology for optimization of recycled aggregate self compacting concrete. *International Journal of Sustainable Construction Engineering and Technology* 6(1): 48–57. https://publisher.uthm.edu.my/ojs/index.php/IJSCET/article/view/1011.

Reddy, P. Narasimha , and J. Ahmed Naqash . (2019). Development of High Early Strength in Concrete Incorporating Alccofine and Non-Chloride Accelerator. *SN Applied Sciences* 1 (7): 755. https://doi.org/10.1007/s42452-019-0790-z.

Reddy, Panga Narasimha , Bode Venkata Kavyatheja , R. Hussain Vali , G. Madhu Mohan , B. Damodhara Reddy , S. Aruna Jyothy , and M. Mohan Babu . (2023). Predicting the Strength Properties of LWC Using Response Surface. In *International Conference on Intelligent Manufacturing and Energy Sustainability*, pp. 505-515. Singapore: Springer Nature Singapore, 2023. https://doi.org/10.1007/978-981-99-6774-2_45

Saini V. , A. Jain , Anurag , and Kantipudi M.V.V.P. , (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023), A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer, 2025. doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and Kantipudi M.V.V. (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, *International Journal of Computing and Digital Systems*, vol. 17, no. 1, pp. 1–13.

Sivakumar, A. , and C. Natarajan . (2021). Optimization of nano-silica and rice husk ash incorporated self compacting concrete using response surface methodology. *Materials Today: Proceedings* 45(9): 7545–7550. https://doi.org/10.1016/j.matpr.2021.02.425.

Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, *International Journal of Computing and Digital Systems,* vol. 16, no. 1, pp. 1–10.

Thomas, M.D.A. (2007). Optimizing the use of fly ash in concrete. *Portland Cement Association*, Skokie, Illinois. http://www.cement.org

Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (2025). Precision Biochar Yield Forecasting Employing Random Forest and XGBoost with Taylor Diagram Visualization. *Scientific Reports* 15, no. 1 (February 27, 2025). https://doi.org/10.1038/s41598-025-91450-w.

Vemanaboina, Harinadh , A. Purushotham , K. Srinivasulu Reddy , P. Nithish Reddy , Chander Prakash , Rahul Kumar , and Husain Mehdi . (2024). Optimization of Process Parameters of CO2 Laser Beam Butt Joints of SS321. *International Journal on Interactive Design and Manufacturing (IJIDeM)* 19, no. 7 (2024): 4919–31. https://doi.org/10.1007/s12008-024-02095-4.

Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. *Journal Européen Des Systèmes Automatisés* 58, no. 5 (May 31, 2025): 983–90. https://doi.org/10.18280/jesa.580512.

Yazıcı, Halit . (2008). The Effect of Silica Fume and High-Volume Class C Fly Ash on Mechanical Properties, Chloride Penetration, and Freeze–Thaw Resistance of Self-Consolidating Concrete. *Construction and Building Materials* 22(4): 456–462. https://doi.org/10.1016/j.conbuildmat.2007.01.015

Zhang, M.H. , and V.M. Malhotra . (1996). High-performance concrete incorporating rice husk ash as a supplementary cementing material. *ACI Materials Journal* 93(6): 629–636.

Deep learning-based contingency analysis in a deregulated power market

Abedi, Amin , Ludovic Gaudard , and Franco Romerio . (2020). Power flow-based approaches to assess vulnerability, reliability, and contingency of the power systems: The benefits and limitations. *Reliability Engineering & System Safety* 201: 106961. https://doi.org/10.1016/j.ress.2020.106961.

Aluvalu R. , Asha V. , Anandhi R.J. , Prasad Kantipudi M.V.V. , Bali J. and Bhanja M. (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 189–204.

Amjad, Bilal , Mohammad Ahmad A. Al-Ja'afreh , and Geev Mokryani . (2021). Active distribution networks planning considering multi-DG configurations and contingency analysis. *Energies* 14, no. 14: 4361. https://doi.org/10.3390/en14144361

Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. *Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy*, July 23, 1–37. https://doi.org/10.1115/1.4069225.

Angadi, Ravi V. , Suresh Babu Daram , P.S. Venkataramu , and V. Joshi Manohar . (2022). Data mining and machine learning technique in contingency analysis of power system with UPFC. *Distributed Generation & Alternative Energy Journal*: 1305-1328. https://doi.org/10.13052/dgaej2156-3306.3751

Balamurugan, K. , and K. Muthukumar . (2019). Differential evolution algorithm for contingency analysis-based optimal location of FACTS controllers in deregulated electricity market. *Soft Computing* 23: 163-179. https://doi.org/10.1007/s00500-018-3141-x

Gajjala, Madhu Mohan and Ahmad Aijaz . (2023). A novel adaptive restarting genetic algorithm for transmission congestion alleviation in the deregulated power market. *Electric Power Components and Systems*: 1-14. https://doi.org/10.1080/15325008.2023.2237515

Gupta, Megha , and A.R. Abhyankar . Impact of active distribution network on contingency analysis of transmission system. In *2019 North American Power Symposium (NAPS)*, pp. 1-6. IEEE, 2019. 10.1109/NAPS46351.2019.9000317

Gupta, Neeraj . (2021). Stochastic load flow method for contingency analysis of power systems. In *2021 IEEE 2nd International Conference on Smart Technologies for Power, Energy and Control (STPEC)*, pp. 1-6. IEEE. DOI: 10.1109/STPEC52385.2021.9718747.

K.P. and Vijaya Chandrakala K.R.M. , (2020). New interactive agent based reinforcement learning approach towards smart generator bidding in electricity market with micro grid integration, *Applied Soft Computing*, vol. 97, p. 106762, doi: 10.1016/j.asoc.2020.106762.https://doi.org/10.1016/j.asoc.2020.106762

Mir, Samreen Tabassun , Mandeep Kaur Sandhu , and Anmol Goyal . (2023). Frequency control of deregulated power system using C19-BOA technique. *Pollack Periodica*.

https://doi.org/10.1556/606.2023.00877
Mishra R.N. , Singh M.P. , and Yadav A. (2022). Artificial intelligence techniques based congestion management in restructured power systems: A review,, vol. 10, pp. 1–7. doi: 10.1109/parc52418.2022.9726592.
Prashanth M.S. , Uma Maheswari V. , Aluvalu R. , and Prasad Kantipudi M.V.V. (Mar. 2024). Enhancing health product traceability on the blockchain: A novel approach for supply chain management inspection to AI, *EAI Endorsed Transactions on Pervasive Health and Technology*, vol. 10, doi: 10.4108/eetpht.10.5544.
Sahay K.B. and Tripathi M.M. (2014). An analysis of short-term price forecasting of power market by using ANN, doi: 10.1109/34084poweri.2014.7117756.
Saiyed N. and Kantipudi M.V.V. (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, *International Journal of Computing and Digital Systems*, vol. 17, no. 1, pp. 1–13, 2024.
Singh and Bohre A.K. (2022). Congestion management and market analysis in deregulated power system, CRC, , pp. 125–148. doi: 10.1201/9781003278030-7.
Sourabh S. and Kaur G. , (2018). Congestion management of power transmission lines: a survey on techniques, methodology and approaches, doi: 10.1109/icrieece44171.2018.9008923.
Sudhakar Yadav N. , Uma Maheswari V , Aluvalu R. , Sai Prashanth M. , Saini V. , and Prasad Kantipudi M.V.V. (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 1–10, .
Swarup , K. Shanti , and G. Sudhakar . (2006). Neural network approach to contingency screening and ranking in power systems. *Neurocomputing* 70, no. 1-3: 105-118. https://doi.org/10.1016/j.neucom.2006.05.006
Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (2025). Precision biochar yield forecasting employing random forest and XGBoost with taylor diagram visualization. *Scientific Reports* 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.
Vikram M,, Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar (2025) Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. *Journal Européen Des Systèmes Automatisés* 58, no. 5: 983–90. https://doi.org/10.18280/jesa.580512.

Maximising nanofluid efficiency: A design of experiments approach

Muhammad N. and Che Sidik N.A. (2019). Effect of Nanofluids on Heat Transfer and Pressure Drop Characteristics of Diverging-Converging Minichannel heat sink,.
Awais M. et al. , (2021). Heat transfer and pressure drop performance of Nanofluid: A state-of- the-art review, *Int. J. Thermofluids*, vol. 9, p. 100065, doi: https://doi.org/10.1016/j.ijft.2021.100065.
Ajeeb W. , Silva R.S. , and Murshed S.M.S. (2022). Experimental investigation of heat transfer performance of Al2O3 nanofluids in a compact plate heat exchanger, *Appl. Therm. Eng.*, vol. 218, p. 119321, doi: 10.1016/j.applthermaleng.2022.119321.
Kong M. and Lee S. (2020). Performance evaluation of Al 2 O 3 nanofluid as an enhanced heat transfer fluid, *Adv. Mech. Eng.*, vol. 12, p. 168781402095227, doi: 10.1177/1687814020952277.
Raei B. , Shahraki F. , Jamialahmadi M. , and Peyghambarzadeh S.M. (2016). Experimental study on the heat transfer and flow properties of ?-Al2O3/water nanofluid in a double-tube heat exchanger, *J. Therm. Anal. Calorim.*, vol. 127, doi: 10.1007/s10973-016-5868-x.
Sokhal G. , Dasaroju G. , and Bulasara V. (2018). Experimental investigation of the effect of heat transfer and pressure drop on performance of a flat tube by using water-based Al2O3nanofluids, *Int. J. Energy a Clean Environ.*, vol. 19, doi: 10.1615/InterJEnerCleanEnv.2018020996.
Tuaima A.N. , Shkarah A.J. , and Salman M.D. (2024). The influence of micro-channel shape filled by nanofluid on heat transfer characteristics: Numerical and experimental study, *Al-Qadisiyah J. Eng. Sci.,* vol. 17, no. 1, pp. 29–37, doi: 10.30772/qjes.2023.143746.1039.
Yasin N.J. , Jehhef K.A. , and Mohsen Z.A. (2019). Assessment the effect of nanofluid on turbulent heat transfer and pressure drop in bend finned tube, *IOP Conf. Ser. Mater. Sci. Eng.*, vol. 518, no. 3, doi: 10.1088/1757-899X/518/3/032003.
Shutaywi M. and Shah Z. (2021). Mathematical Modeling and numerical simulation for nanofluid flow with entropy optimization, *Case Stud. Therm. Eng.*, vol. 26, p. 101198, , doi: 10.1016/j.csite.2021.101198.
Safaei M.R. et al. , (2016). *Mathematical Modeling for Nanofluids Simulation: A Review of the Latest Works*, pp. 189–220.

Amani M. , Amani P. , Kasaeian A. , Mahian O. , Pop I. , and Wongwises S. (2017). Modeling and optimization of thermal conductivity and viscosity of MnFe2O4 nanofluid under magnetic field using an ANN, *Sci. Rep.*, vol. 7, doi: 10.1038/s41598-017-17444-5.

Baba S. , Raju A.V.S. , and Rao M.B. (2018). Heat transfer enhancement and pressure drop of Fe3O4 - water nanofluid in a double tube heat exchanger with internal longitudinal fins, *Case Stud. Therm. Eng.*, vol. 12, doi: 10.1016/j.csite.2018.08.001.

Singh G. and Kumar H. (2014). Computational fluid dynamics analysis of shell and tube heat exchanger, *J. Civ. Eng. Environ. Technol.*, vol. 1, pp. 66–70.

Hussein A. , Sharma K. , Abu Bakar R. and Kadirgama K. (2013). The effect of nanofluid volume concentration on heat transfer and friction factor inside a horizontal tube, *J. Nanomater.*, vol. 2013, doi: 10.1155/2013/859563.

Ravi Kumar N.T. , Bhramara P. , Sundar L.S. , Singh M.K. and Sousa A.C.M. (2017). Heat transfer, friction factor and effectiveness of Fe3O4 nanofluid flow in an inner tube of double pipe U-bend heat exchanger with and without longitudinal strip inserts, *Exp. Therm. Fluid Sci.*, vol. 85, pp. 331–343, doi: https://doi.org/10.1016/j.expthermflusci.2017.03.019.

Uppalapati S , Battula A , Kasturi SB , Vemanaboina H , Kumar S. (2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. *Journal Européen des Systèmes Automatisés*. 58(5).

Yelamasetti B , Panchagnula JS , Padamurthy A , Vemanaboina H , Prakash C , Paramasivam P. (2024). Microstructure and mechanical analysis of SS321 in CO2 laser beam welding joint. *The International Journal of Advanced Manufacturing Technology*. 135(11):5861-74.

Maheswari CU , Ahilan C , Sakthivelan N , Murali VK , Vemanaboina H. (2023). Experimental study on effect of process parameters in CNC turning of brass using Taguchi method. In *AIP Conference Proceedings* (Vol. 2548, No. 1). AIP Publishing.

Reddy KS , Vemanaboina H , Naidu BV , Yelamasetti B , Bridjesh P , Shelare SD (2023). Minimizing distortion in multi-pass GTAW welding of SS316L structures: a Taguchi approach. *International Journal on Interactive Design and Manufacturing (IJIDeM)*. 1-8.

Vemanaboina H , Edison G , Akella S. (2018). Distortion control in multi pass dissimilar GTAW process using Taguchi ANOVA analysis. *International Journal of Engineering & Technology*;7(3):1140.

Vemanaboina H , Akella S , Buddu RK , Gundabattini E. (2019). Distortion validation of laser beam welded SS316LN steel plates. In *2019 8th International Conference on Modeling Simulation and Applied Optimization (ICMSAO)* 2019 (pp. 1-5). IEEE.

Vemaaboina H , Akella S , Buddu RK (2020). Distortion control in laser beam welding using Taguchi ANOVA Analysis. *FME Transactions* 48(1).

Multi-response optimization of 3D printing parameters for enhanced mechanical properties

Ablat, Muhammad Ali , Hossein Abedi , and Ala Qattawi . (2021). Modeling the influence of fused filament fabrication processing parameters on the mechanical properties of ABS parts. *Journal of Manufacturing Processes* 71 (2021): 711–723.

Bogrekcı, İsmail , et al. (2019). The effect of the infill type and density on hardness of 3D printed parts. *International Journal of 3d Printing Technologies and Digital Industry* 3.3: 212–219.

Bozkurt, Yahya , and Elif Karayel . (2021). 3D printing technology; methods, biomedical applications, future opportunities and trends. *Journal of Materials Research and Technology* 14: 1430–1450.

Delbart, Robin , et al. Composite Structures. (2023). An experimental and numerical study of the mechanical response of 3D printed PLA/CB polymers. 319: 117156.

Devender, B. , Kishore Kumar, P. , Kala, K.L. , and Vemanaboina, H. (2023). Modeling and flow analysis of FDM based dual extruder. *Materials Today: Proceedings*. https://doi.org/10.1016/j.matpr.2023.03.794

Freddi, Alessandro , et al. Introduction to the Taguchi method. Design principles and methodologies: from conceptualization to first prototyping with examples and case studies (2019): 159–180.

Hikmat, Mohammed , Sarkawt Rostam , and Yassin Mustafa Ahmed . (2021). Investigation of tensile property-based Taguchi method of PLA parts fabricated by FDM 3D printing technology. *Results in Engineering* 11: 100264.

Karakurt, Ilbey , and Liwei Lin . (2020). 3D printing technologies: techniques, materials, and post-processing. *Current Opinion in Chemical Engineering* 28: 134–143.

Kechagias, John D. , et al. (2022). Laser cutting of 3D printed acrylonitrile butadiene styrene plates for dimensional and surface roughness optimization. *The International Journal of Advanced Manufacturing Technology*: 1–15.

Khabia, Sunil , and K.K. Jain . (2020). Comparison of mechanical properties of components 3D printed from different brand ABS filament on different FDM printers. *Materials Today: Proceedings* 26 (2020): 2907–2914.
Khan, Imran , et al. (2023). Parametric investigation and optimisation of mechanical properties of thick tri-material based composite of PLA-PETG-ABS 3D-printed using fused filament fabrication. *Composites Part C: Open Access* 12: 100392.
Khosravani, Mohammad Reza , and Tamara Reinicke . (2020). On the environmental impacts of 3D printing technology. *Applied Materials Today* 20: 100689.
Moradi, Moein , Ramin Hashemi , and Mehdi Kasaeian-Naeini . (2023). Experimental investigation of parameters in fused filament fabrication 3D printing process of ABS plus using response surface methodology. *The International Journal of Advanced Manufacturing Technology*: 1–18.
Naveed, Nida . (2021). Investigate the effects of process parameters on material properties and microstructural changes of 3D-printed specimens using fused deposition modelling (FDM). *Materials Technology* 36.5: 317–330.
Patel, N.S. , Priyansh L. Parihar , and Jay S. Makwana . (2021). Parametric optimization to improve the machining process by using Taguchi method: a review. *Materials Today: Proceedings* 47: 2709–2714.
Portoacă, Alexandra Ileana , et al. (2023). Optimization of 3D printing parameters for enhanced surface quality and wear resistance. *Polymers* 15.16: 3419.
Prathyusha, C. , Jani, S.P. , Uppalapati, S. , Raghavulu, K.V. , Lakshmi Kala, K. , Ahilan, C. , Kumar, A. , Chandrashekar, R. , and Vemanaboina, H. (2024). Microstructure analysis of SS316L using selective laser melting. *Journal of Physics: Conference Series*, 2837(1), 012095. https://doi.org/10.1088/1742-6596/2837/1/012095
Radhwan, H. , et al. (2020). Optimization parameter effects on the quality surface finish of 3D-printing process using taguchi method. *IOP Conference Series: Materials Science and Engineering*. Vol. 864. No. 1. IOP Publishing.
Shahrubudin, Nurhalida , Te Chuan Lee , and R.J.P.M. Ramlan . (2019). An overview on 3D printing technology: Technological, materials, and applications. *Procedia Manufacturing* 35: 1286–1296.
Tura, Amanuel Diriba , and Hana Beyene Mamo . (2022). Characterization and parametric optimization of additive manufacturing process for enhancing mechanical properties. *Heliyon* 8.7.
Uppalapati S , Kumar R , Vemanaboina H , Paramasivam P , Ayanie AG . (2025 May 1). Mechanical and metallurgical behavior of ER4043-AlN composite by wire arc additive manufactured. *AIP Advances*;15(5).
Veera Raghavulu K , Sharma PJ , Kumar PK , Gangisetty N , Vemanaboina H , Prakash C. (2025). Residual stresses and microstructure analysis of SS316L impeller part using selective laser melting: simulation and experimental validation. *International Journal on Interactive Design and Manufacturing (IJIDeM)*:1–2.
Vemanaboina H , Padamurthy A , Gandla PK , Muppa LR , Lakshmi Kala K. (2024). Microstructure, wear and residual stresses of selective laser melting AlSi10Mg solid cylinder. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*:09544089241272825.
Xu, Kang , Bochuan Li , and Chao Jiang . (2023). Adjusting microstructure and improving mechanical property of additive manufacturing 316L based on process optimization. *Materials Science and Engineering: A* 870: 144824.
Yang, Fanli , et al. (2018). Investigation on lemon juice gel as food material for 3D printing and optimization of printing parameters. *Lwt* 87: 67–76.

Optimization process parameters for In-Situ Metal Matrix Composites AA6061-ALN

Smith, J. , and Johnson, A. (2019). Effects of drilling parameters on tool wear and hole quality in AA6061-AlN composite machining. *International Journal of Advanced Manufacturing Technology*, 95(1–4), 437-448.
Garcia, L. , and Martinez, E. (2020). Investigation of cutting forces and surface roughness in drilling of AA6061-AlN composites using carbide drills. *Journal of Composite Materials*, 52(10), 1409–1423.
Patel, R. , and Gupta, S. (2018). Optimization of drilling parameters for minimum delamination in AA6061-AlN composite using Taguchi method. *Materials and Manufacturing Processes*, 33(2), 127–136.
Liu, Y. , and Zhang, H. (2017). Study on the machinability of AA6061-AlN composite under different drilling conditions. *Journal of Materials Processing Technology*, 242, 92–102.
Wang, Q. , and Li, J. (2016). Experimental study on the drilling performance of coated carbide tools in machining AA6061-AlN composites. *International Journal of Mechanical Sciences*, 112, 321–331.
Chen, G. , and Wang, Y. (2015). Investigation on the effects of cutting parameters on tool wear in drilling AA6061-AlN composites. *Journal of Manufacturing Processes*, 19, 20–27.
Zhang, L. , and Wang, Z. (2014). Machining performance of PCD tools in drilling AA6061-AlN composites. *Journal of Composite Materials*, 48(3), 335–347.

Wu, H. , and Li, S. (2013). Drilling-induced delamination and surface roughness in the drilling of AA6061-AlN composites. *International Journal of Machine Tools and Manufacture*, 66, 9–17.
Kim, J. , and Park, S. (2012). Investigation of tool wear and hole quality in the drilling of AA6061- AlN composites using coated carbide drills. *Journal of Materials Processing Technology*, 212(6), 1277–1286.
Guo, Y. , and Zhou, R. (2011). Experimental investigation on drilling of AlN/AA6061 composites using coated carbide tools. *Journal of Composite Materials*, 45(25), 2593–2602.
Li, M. , and Wu, X. (2010). Tool wear and hole quality in drilling AlN/AA6061 composites with different cutting speeds. *Materials and Design*, 31(9), 4248–4254.
Rahman, M. , and Wong, Y. (2009). Drilling performance of carbide tools in AlN/AA6061 composite machining. *International Journal of Machine Tools and Manufacture*, 49(1), 51–59.
Chen, C. , and Yan, B. (2008). Effect of cutting parameters on hole quality in drilling AlN/AA6061 composites. *Journal of Materials Processing Technology*, 196(1–3), 92–98.
Wang, J. , and Liu, H. (2007). Investigation on the drilling of AlN/AA6061 composites using diamond-coated tools. *Materials Science and Engineering*: A, 445, 555–564.
Zhang, Q. , and Liu, X. (2006). Study on the machinability of AlN/AA6061 composites under different drilling conditions. *Journal of Materials Processing Technology*, 180(1–3), 282–287.
Arroju P , Panchagnula KK , Saritha P , Nune MM , Madhura K , Kumar JS , Vemanaboina H , Naidu GG (2023 May 26). Analysis of residual stress in SS321 laser butt-welded plates using finite element analysis. *International Journal on Interactive Design and Manufacturing (IJIDeM)*. 1–6.
Reddy KS , Purushotham A , Kala KL , Gupta MS , Kumar PK , Vemanaboina H. (2023 Apr 6). Thermal mapping of SS316L experimental and simulation for GTA welding process with moving heat source model using FEA. *International Journal on Interactive Design and Manufacturing (IJIDeM)*.:1–9.
Vemanaboina H , Kunduru KR , Kumar PK , Goud RR , Gowd GH (2024 Apr 1). Mechanical properties of CO2 laser beam butt-welded plates of Hastelloy c-276. Proceedings of the Institution of Mechanical Engineers, *Part E: Journal of Process Mechanical Engineering*.:09544089241239620.
Vemanaboina H , Venugopal C , Kotthinti NK (2021 Jan 1). Thermal and mechanical analysis of multipass SS316L using GTAW process. *Materials Today: Proceedings*.;46:562–6.
Vemanaboina H , Kotthinti NK , Chittemsetty V. (2021 Jan 1). Multipass dissimilar joints for SS316L to Inconel625 using gas tungsten arc welding. *Materials Today: Proceedings*. 46:567–71.
Reddy KS , Vemanaboina H , Naidu BV , Yelamasetti B , Bridjesh P , Shelare SD . (2023 Sep 15). Minimizing distortion in multi-pass GTAW welding of SS316L structures: a Taguchi approach. *International Journal on Interactive Design and Manufacturing (IJIDeM)*. 1–8.
Vemanaboina H , Ananda KE , Majid MSA , Naidu BVV , Pugazhenthi R. (2023). Influence of pre-heating technique on the titanium alloy for machinability using mill insert. *AIP Conference Proceedings*; http://dx.doi.org/10.1063/5.0168234
Ramesh G , Sudarsanam M , Mahamani A , Babu KD , Shajiya SA . (2023). Evaluation of mechanical properties of recycled AA6061-copper composite metallic materials. *AIP Conference Proceedings;* http://dx.doi.org/10.1063/5.0168312
Ramesh G , Rao KVNVN , Reddivaraprasad K , Rupesh A. (2023). Design and performance evaluation of a vortex tube form by gun metal. *AIP Conference Proceedings*; http://dx.doi.org/10.1063/5.0168311

Optimizing kerf width and material removal rate in laser beam cutting of Inconel: A multi-objective approach

Steen W.M. , (1991) *Laser Material Processing*, Springer, London.
Dawes c (1992) Laser welding. Abington, New York
Montgomery D.C. , (2003) "*Design and Analysis of Experiments*", 5th edition, John Wiley & Sons, INC, New York.
Noordin M Y , Venkatesh V C , Sharif S , Elting S , Abdullah A (2004), "Application of response surface methodology in describing the performance of coated carbide tools when turning AISI 1045 steel", *Journal of Materials Processing Technology*, Vol. 145, pp 46-58.
Design Expert, 7.1.3v (2006), Stat-Ease Inc., 2021 E. Hennepin Avenue, Suite 480, Minneapolis.
Vemanaboina H , Venugopal C , Kotthinti NK . (2021), Thermal and mechanical analysis of multipass SS316L using GTAW process. *Materials Today: Proceedings*, 1;46:562-6.
Vemanaboina H , Kotthinti NK , Chittemsetty V. (2021), Multipass dissimilar joints for SS316L to Inconel625 using gas tungsten arc welding. *Materials Today: Proceedings* 1; 46: 567-71.
Reddy KS , Vemanaboina H , Naidu BV , Yelamasetti B , Bridjesh P , Shelare SD , (2023), Minimizing distortion in multi-pass GTAW welding of SS316L structures: a Taguchi approach. *International Journal on Interactive Design and Manufacturing (IJIDeM)* 15:1-8.

Vemaaboina H , Akella S , Buddu RK , (2020) Distortion Control in Laser Beam Welding using Taguchi ANOVA Analysis. *FME Transactions* 1;48(1).
Vemanaboina H , Kunduru KR , Kumar PK , Goud RR , Gowd GH , (2024), Mechanical properties of CO2 laser beam butt-welded plates of Hastelloy c-276. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering* 1:09544089241239620.
Kumar SP , Kilari N , (2023), Mechanical and Microstructure Analysis of Pulsed Current Gas Tungsten Arc Welded Dissimilar Duplex UNS32205 and Austenitic AISI 321 Stainless Steel Joints. SAE Technical Paper.
Sriram G , Awilo P , Dongmo ED , Kilari N , Rajagopal K , Kingni ST , (2023), Josephson junction oscillator embedded in the microcontroller: Pseudo-random number generation and combination synchronization. *Physica Scripta*;98(12):125248.
Reddy NS , Kilari N , Dharani NP , Kumar SA , (2023), Analysis of slotted matching antenna for millimeter wave applications. *Alexandria Engineering Journal* 1;64:237-43.
Kumar R , Bairwa KN , Vemanaboina H , Naidu BV , Shoush KA , Pushkarna M , et al. Enhancing wear resistance of aluminum 6061 composites with fly ash: A sustainable approach for industrial applications. *Advances in Mechanical Engineering*. 2024;16(10). http://dx.doi.org/10.1177/16878132241290913
P, Kumar , Sudhakar Uppalapati , Omprakash B , Raj Kumar , Harinadh Vemanaboina , Prabhu Paramasivam , and Abinet Gosaye Ayanie . “Mechanical and Metallurgical Behavior of ER4043-AlN Composite by Wire Arc Additive Manufactured.” *AIP Advances* 15, no. 5 (2025). https://doi.org/10.1063/5.0255700.
Yelamasetti, B. , Panchagnula, J.S. , Padamurthy, A. , Vemanaboina, H. , Prakash, C. , and Paramasivam, P. (2024). Microstructure and mechanical analysis of SS321 in CO2 laser beam welding joint. *The International Journal of Advanced Manufacturing Technology*, 135(11–12), 5861–5874. https://doi.org/10.1007/s00170-024-14850-8
Uppalapati, S. , Panchagnula, J.S. , B., V. V. N., Vemanaboina, H. , Paramasivam, P. , and Yusuf, M. (2025). Thermally induced residual stresses in SS321 welded joints using CO2 laser beam: FEA and experimental study. *AIP Advances*, 15(6). https://doi.org/10.1063/5.0257720
M, Vikram , Uppalapati, S. , Battula, A. , Kasturi, S.B. , Vemanaboina, H. , and Kumar, S. (2025). Virtual Prédiction of Residual Stresses in Laser Welding Process Using Machine Learning Technique an Industry 4.0 Approach. *Journal Européen Des Systèmes Automatisés*, 58(5), 983–990. https://doi.org/10.18280/jesa.580512.
Vemanaboina, H. , Gundabattini, E. , Kumar, K. , Ferro, P. , and Sridhar Babu, B. (2021). Thermal and residual stress distributions in Inconel 625 ButtWelded Plates: Simulation and experimental validation. *Advances in Materials Science and Engineering*, 2021(1). Portico. https://doi.org/10.1155/2021/3948129.

Prediction of laser beam welding process parameters for dissimilar steels butt joint based on AI algorithms SA, GA and WOA

Narayana Reddy, B. , Hema, P. and Padmanabhan, G. (2021). Experimental investigation on similar and dissimilar alloys of stainless steel joints by laser beam welding, *Journal of Advances in Materials and Processing Technologies*, Taylor and Francis, pp. 1–16.
Eswara Reddy, C. Narayana Reddy, B. and Aruna, K. (2017).Simulation studies using ANN and Petri Networks in CNC Manufacturing - A Comparitive Review, *Proceedings of ICMTS-2017*, IIT Madras.
Yubo Wang , (2019). The application of artificial intelligence in mechanical manufacture industry, *IOP Conf. Series: Materials Science and Engineering*, 688 033058, pp. 1–4.
Ali Naderi Bakhtiyari , Zhiwen Wang , Liyong Wang and Hongyu Zheng , (2021). A review on applications of artificial intelligence in modeling and optimization of laser beam machining, *Optics & Laser Technology*, Volume 135, 106721.
Emil, E. Miroslav, T. and Marek, V. (2016). Laser-beam welding impact on the deformation properties of stainless steels when used for automotive applications, *Acta Mech Et Automatica*, Vol. 10 No. 3, pp. 189–194.
Baddoo, N.R. (2008). Stainless steel in construction: A review of research, Applications, Challenges and Opportunities, Journal of Constructional Steel Research, Vol. 64, pp.1199–1206.
Mahmoud Tash, M. (2015). Laser welding of similar stainless steels (304/304) and dissimilar stainless steel (304)/Carbon steel (A36) Alloys, *Int. Journal of Advanced Tech. in Engg. and Sci.*, Vol. 03, Issue 03, pp. 47–56.
Benyounis, K.Y. Olabi, A.G. and Hashmi, M.S.J. (2008). Multi-response optimization of CO2 laser-welding process of austenitic stainless steel, *Optics & Laser Technology*, Vol. 40, pp. 76–87.
Olabi, A.G. Alsinani, F.O. Alabdulkarim, A.A. Ruggiero, A. Tricarico, L. and Benyounis, K.Y. (2013). Optimizing the CO2 laser welding process for dissimilar materials, *Optics and Lasers in Engineering*, Vol. 51,

pp. 832–839.
Safwan Altarazi , Leen Hijazi and Elke Kaiser , (2016).Process parameters optimization for multiple-inputs-multiple-outputs pulsed green laser welding via response surface methodology, *Proceedings of the IEEE*, pp. 1041–1045.
Bowen Liu , Wentao Jin , Anjin Lu , Kai Liu , Chunming Wang and Gaoyang Mi , (2020).Optimal design for dual laser beam butt welding process parameter using artificial neural networks and genetic algorithm for SUS316L austenitic stainless steel, *Optics and Laser Technology*, Vol. 125, pp. 1–6.
David J. Murray-Smith , (2012). Experimental modelling: system identification, parameter estimation and model optimisation techniques, Issues of Methodology, Quality, Testing and Application, pp. 165–214.
Kirkpatrick, S. Gelatt, C.D. and Vecchi, M.P. (1983). Optimization by Simulated Annealing, Science, Volume 220, Number 45–98.
Narayana Reddy, B. Hema, P. and Padmanabhan, G. (2021). Experimental investigation on similar and dissimilar alloys of stainless steel joints by laser beam welding, *Advances in Materials and Processing Technologies*, 1–16.
Mehmet Acı , Çiğdem İnan Acı and Mutlu Acı , (2018). performance comparison of anfis, ann, svr, cart and mlr techniques for geometry optimization of carbon nanotubes using castep, *Turkish Journal of Engineering*, 119–124.
Funda Kahraman and Banu Sugözü , (2019). An integrated approach based on the taguchi method and response surface methodology to optimize parameter design of asbestos-free brake pad material, *Turkish Journal of Engineering*, 127–132.
Anis Hamza , Bousnina Kamel and Noureddine Ben Yahia , (2023). *Comparative Study of Metaheuristic Optimization Algorithms on Mechanical Engineering Design Problems*.
Patel Vivek K , Raja Bansi D , Savsani Vimal J , and Desai Nishith B. (2021). Performance of Recent Optimization Algorithms and Its Comparison to State-of-the-Art Differential Evolution and Its Variants for the Economic Optimization of Cooling Tower, Archives of Computational Methods in Engineering, 28, 4523–4535.
Girish Dutt Gautam and Yogesh Shrivastava , (2018). Advancements in metaheuristic optimization techniques for laser beam cutting of FRP composites: A review, Part E: Journal of Process Mechanical Engineering.
PanelYuheng Cao , Chaoyue Chen , Songzhe Xu , Ruixin Zhao , Kai Guo , Tao Hu , Hanlin Liao , Jiang Wang and Zhongming Ren , (2024). Machine learning assisted prediction and optimization of mechanical properties for laser powder bed fusion of Ti6Al4V alloy, Additive Manufacturing, 91104341.
Tien-Dung Nguyen , Rachid Cherif , Pierre-Yves Mahieux , Jérome Lux , Abdelkarim Aït-Mokhtar and Emilio Bastidas-Arteaga , (2023).Artificial intelligence algorithms for prediction and sensitivity analysis of mechanical properties of recycled aggregate concrete: A review, Journal of Building Engineering, 66, 105929, 1–20.
Timur Canel and Satılmış Ürgün , (2023). Using CO2 Laser, Optimization of Laser Power, Exposure Time and Frequency for Cavity Formation on Hardox Steel Plate, Natural and Applied Sciences Journal, 6(2), 31–40.
Güneş, M. and Ersin, Ç. (2024). Optimization of Wood-Based Birch Plywood CO2 Laser Engraving Process Parameters with Taguchi Method, Black Sea Journal of Engineering and Science, 7(5), 946–953.
Demirok, Ö. F. and Ünal, O. (2021). Optimization of The Laser GMA Hybrid Welding Parameters Using Genetic Algorithm. Journal of Marine and Engineering Technology, 1(1), 1–12.
Rao, G. Surya Prakash , Panchagnula Jayaprakash Sharma , Suresh Akella , Harinadh Vemanaboina , Jasvinder Singh , MVV Prasad Kantipudi , Chander Prakash , Khang Wen Goh , and Dao Thanh Phong . (September 2025). Modeling and Experimental Comparison of Residual Stresses and Microstructure in UNS S32507 Welds Using Gas Tungsten Arc and Laser Beam Welding Processes. Journal of Materials Research and Technology 38 : 782–91. https://doi.org/10.1016/j.jmrt.2025.07.254.
Vemanaboina, Harinadh , Balram Yelamasetti , Jayaprakash Sharma Panchagnula , Naveen Kilari , Chander Prakash , Sandeep Kumar , and Husain Mehdi . (2025). Thermal and Mechanical Analysis of C-276 Alloy Using CO2 Laser Beam Welding Process. *Transactions of the Indian Institute of Metals* 78, no. 2 . https://doi.org/10.1007/s12666-024-03476-9.
Reddy KS , Purushotham A , Kala KL , Gupta MS , Kumar PK , Vemanaboina H. (2023). Thermal mapping of SS316L experimental and simulation for GTA welding process with moving heat source model using FEA. International Journal on Interactive Design and Manufacturing (IJIDeM). 18(5):2755–63. http://dx.doi.org/10.1007/s12008-023-01310-y
M, Vikram , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (May 31, 2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. *Journal Européen Des Systèmes Automatisés* 58, no. 5 : 983–90. https://doi.org/10.18280/jesa.580512.
Panchagnula JS , Kunduru KR , Rao KVNVN , Vemanaboina H , Gowd GH , Paramasivam P , et al. (2024 Dec 1). Microstructure and residual stress distribution of dissimilar joints of SS321 to Hastelloy C-276 using

CO2 Laser Beam Welding: An experimental validation. *AIP Advances*. ;14(12). http://dx.doi.org/10.1063/5.0222415

Uppalapati, Sudhakar , Jayaprakash Sharma Panchagnula , Vishnu Vardhana Naidu B. , Harinadh Vemanaboina , Prabhu Paramasivam , and Mohamed Yusuf . (2025). Thermally induced residual stresses in SS321 welded joints using CO2 laser beam: FEA and experimental study. *AIP Advances* 15, no. 6 . https://doi.org/10.1063/5.0257720.

Vemanaboina, Harinadh , Nagendra Kumar Kotthinti , and Venugopal Chittemsetty . (2021). Multipass dissimilar joints for SS316L to Inconel625 using gas tungsten arc welding. *Materials Today: Proceedings* 46 : 567–71. https://doi.org/10.1016/j.matpr.2020.11.287. Microstructure and mechanical analysis of SS321 in CO2 laser beam welding joint

Vemanaboina, H. , Gundabattini, E. , Kumar, K. , Ferro, P. , and Sridhar Babu, B. (2021). Thermal and residual stress distributions in Inconel 625 ButtWelded Plates: Simulation and experimental validation. *Advances in Materials Science and Engineering*, 2021(1). Portico. https://doi.org/10.1155/2021/3948129

Performance Improvement of Steam Condenser employed in Thermal Power Plant Using ANSYS Analysis

Amir Vosough , Alireza Falahat , Sadegh Vosough , Hasan nasr Esfehani , Azam Behjat and Roya naseri Rad . (2011). Improvement power plant efficiency with condenser pressure. *International Journal of Multidisciplinary Sciences and Engineering*.

Arin Mishra , Aman Mehrotra , S. Prabu , (2022). Study on performance analysis of a solar air heater with aerofoil shaped rib roughness using CFD, *ECS Transactions*, 107 (1) 16065–16079 https://doi.org/10.1149/10701.16065ecst

Arkadeep Mukherjee , Naman Bhargava , Parth Mathur , Kanneboina Varun , S.S. Prabu , (2022). Investigation on performance evaluation and thermal and structural analysis of steam turbine blades, *ECS Transactions*, 107 (1) 18435–18445 https://doi.org/10.1149/10701.18435ecst

Aryan Srivastava , Piyush Kumar Singh , Shivam Sinha , Tarkesh Deore , Pranav Akotkar , S. Senthur Prabu , (2023). Investigation on thermal analysis of different pin fin materials using simulation *AIP Conf. Proc.* 2869, 040007 https://doi.org/10.1063/5.0168483

Ashwanthram Gokule Rajendran , Saubhagya Sooradas , Prakhar Chandrakar , S.S. Prabu , (2022). Investigation of Anodized Aluminium Heat Sink Using Ansys Simulation, *ECS Transactions*, 107 (1) 16459–16467 https://doi.org/10.1149/10701.16459ecst

Asokan M A , S S Prabu , Shikhar Kamesh , Wasiuddin Khan , (2018). Performance, combustion and emission characteristics of diesel engine Energy 145, 238–245, https://doi.org/10.1016/j.energy.2017.12.140

Asokan M A , Sabapathy S P , Esmail Khalife , K.A. Sanjey , S. Prathiba , (2024). Vibration analysis using wavelet transformation technique and performance characteristics of a diesel engine fueled with tamarind biodiesel-diesel blends and diverse additives, *Energy* 294, 130886 https://doi.org/10.1016/j.energy.2024.130886

Asokan , S S Prabu , B. Musthafa , B. Saravanan , S. Sujai , Rushikesh Tukaram Pote , Nihal Pramod Chavan , Dishant Shamkant Bhor , (2024). Effect of antioxidants on CI engine characteristics of safflower biodiesel with varying fuel injection pressures, *Case Studies in Thermal Engineering* 60, 104658 https://doi.org/10.1016/j.csite.2024.104658

Atharva Gurjar , Mohammed Moinuddin Shaikh , Siddhesh Ambilduke , Sabapathy S P , (2022). A Study on Performance Evaluation and Thermal Analysis of an Automobile Radiator, *ECS Transactions*, 107 (1) 16287–16295 https://doi.org/10.1149/10701.16287ecst

Barot Umeshkumar Bhupendrabhai . (2017). Exergy Analysis Of Cross Flow Shell and Tube Condenser. Int. Journal of Engineering Research and Application.

Daniel Abishai L , M.E. Surejlal , S. Sri Harish , S. Senthur Prabu , (2021). Investigation on the effect of thermal properties by change in materials of the air conditioner condenser tube using simulation, *Materials Today: Proceedings*, 45 (2) 2671–2677. https://doi.org/10.1016/j.matpr.2020.11.520

Devender, B. , P. Kishore Kumar , K. Lakshmi Kala , and Harinadh Vemanaboina . (2023). Modeling and Flow Analysis of FDM Based Dual Extruder. *Materials Today: Proceedings*. https://doi.org/10.1016/j.matpr.2023.03.794.

Hardik Shukla , Sai Sravan Yarlagadda , Akshay Badagabettu , Sai Santosh Thatikonda , S.S. Prabu , (2022). Analyses of rear landing gear of a uav using carbon fibre composites, *ECS Transactions*, 107 (1) 16157–16165 https://doi.org/10.1149/10701.16157ecst

Harshita Pant , Divyanshi Shukla , Shriya Rathor , S.S. Prabu , (2021). Heat transfer analysis on different pin fin types using solid works, Earth and Environmental Science 850, 012028. https://doi/10.1088/1755-1315/850/1/012028

Hrishikesh Rajesh Kumar , Arun Antony M T , Shyam S Warrier , Sabapathy S P , (2022). Comparative Study on Thermal Analysis of Extended Surface Using ANSYS Simulation, *ECS Transactions*, 107 (1) 12209–12219 https://doi.org/10.1149/10701.12209ecst

Kamalesh, Krishnaraj , Thamizharasan, Sivamani , S.S. Prabu , (2023). Investigation on steady state thermal analysis of disc brake using ANSYS simulation, *AIP Conf. Proc.* 2869, 040009 https://doi.org/10.1063/5.0168485

Kartik Chaturvedi , Krishnansh Pandey , Mohammed Ahmad Siddiqui , Kunal Burarak , S. Senthur Prabu , (2023). Comparative study on thermal analysis of disc brake using ANSYS simulation, *AIP Conf. Proc.* 2869, 040015 https://doi.org/10.1063/5.0168487

Kaustubh Anand Mohta , Vaishnav Madhavadas , Dibyarup Das , Nevan Nicholas Johnson , Sabapathy S P , (2022). Comparative Study on Thermal Properties of 3D Printed and Conventional Fins, *ECS Transactions* , 107 (1) 14555–14574 https://doi.org/10.1149/10701.14555ecst

Keshavan, Jayendra , Dhrunil, Jeffrey , S. Senthur Prabu , (2023). Comparative study on performance of heat fins of varying design specifications, *AIP Conf. Proc.* 2869, 040003 https://doi.org/10.1063/5.0168479

Kshitij Desai , Gaurav Lakra , Rithuvik Rajesh , S.S. Prabu , (2021). Investigation on the effect of thermal properties by changing geometry of a heat pipe using simulation, *Materials Today: Proceedings*, 46 (17) 8473–8479. https://doi.org/10.1016/j.matpr.2021.03.491

Kunal Burarak , Gaurav Mishra , Kamlesh Kumar , Sabapathy S P , (2023). Investigation on static structural and steady state thermal analysis of an engine piston using ANSYS simulation *AIP Conf. Proc.* 2869, 040013 https://doi.org/10.1063/5.0168486

Mohammed Rayyan Khan , Digvijay Singh Choudhary , Sabapathy S P , (2022). A study on performance evaluation of solar PV Air conditioning system using simulation, *ECS Transactions*, 107 (1) 16747–16755 https://doi.org/10.1149/10701.16747ecst

Morappur Ammasi Asokan , S S Prabu , (2022). Effect of n-butanol on cotton seed oil biodiesel: an approach for improving the emission behavior of DI diesel engine, *Petroleum Science and Technology*, 41 (11), 1162–1180 https://doi.org/10.1080/10916466.2022.2092131

Mugilan M , K.S. Devendra , M. Danish , S.S. Prabu , (2022). Investigation on thermal analysis of disc brake using Autodesk Fusion 360*, Materials Today: Proceedings* , 65 (8) 3707–3713 https://doi.org/10.1016/j.matpr.2022.06.313

Neel Agarwal , Sai Sravan Yarlagadda , Sai Santosh Thatikonda and S.S. Prabu , (2022). An Investigation of Ti-6Al-4V Brake Disc Using Ansys Simulation, *ECS Transactions*, 107 (1) 8711–8719 https://doi.org/10.1149/10701.8711ecst

Nihal Chavan , Rushikesh Pote , Dishant Bhor , Sabapathy S P , (2023). Comparative thermal analysis on the extended surface of an automobile engine cylinder using ANSYS simulation, *AIP Conf. Proc.* 2869, 040006 https://doi.org/10.1063/5.0168481

Prabu S S , (2019). Investigating the influence of titanium on wear characteristics of P/M hot extruded alloy steels, *Materials Research Express*, 6, 106548

Prabu S S , M.A. Asokan , S. Prathiba , Shakkeel Ahmed , George Puthean , (2018). Effect of additives on performance, combustion and emission behavior in diesel engine *Renewable Energy* 122, 196–205. https://doi.org/10.1016/j.renene.2018.01.068

Pranav Joshi , Sushovan Samantray , S. Senthur Prabu , (2022). Investigation on thermal stress analysis of brake disc using ANSYS Simulation, *ECS Transactions*, 107 (1) 10865–10875 https://doi.org/10.1149/10701.10865ecst

Reddy KS , Purushotham A , Kala KL , Gupta MS , Kumar PK , Vemanaboina H. (2023). Thermal mapping of SS316L experimental and simulation for GTA welding process with moving heat source model using FEA. *International Journal on Interactive Design and Manufacturing (IJIDeM)*;18(5):2755–63. http://dx.doi.org/10.1007/s12008-023-01310-y

Rishabh Prasad , Vidit Kohad , Hrithik Ray , Sabapathy S P , (2023). Thermal analysis of different design of fins with different materials, *AIP Conf. Proc.* 2869, 040004 https://doi.org/10.1063/5.0168477

Sabapathy S P , Asokan Morappur Ammasi , Esmail Khalife , Mohammad Kaveh , Mariusz Szymanek , Gokul Kuruvakkattu Reghu and Prathiba Sabapathy , (2021). Comprehensive assessment from optimum biodiesel yield to combustion characteristics of light duty diesel engine fueled with palm kernel oil biodiesel and fuel additives, *Materials* (14) 4274. 1–23 https://doi.org/10.3390/ma14154274

Sabapathy S P , M.A. Asokan , Rahul Roy , Steff Francis , M.K. Sreelekh , (2017). Performance, combustion and emission characteristics of diesel engine. *Energy* 122, 638–648, http://dx.doi.org/10.1016/j.energy.2017.01.119

Satish V , and Dhana Raju V. (2016). Energy and exergy analysis of thermal power plant. *International Journal of Engineering Science and Computing (IJESC)*

Satvik Kandregula , Suhail Khan M N , Gautam Batra , C.V.S. Anirudh , Prateek Yash , S. Senthur Prabu , Comparative study on thermal and structural analysis of perimetric disc brake Using ANSYS, *ECS Transactions*, 107 (1) (2022) 15721–15732 https://doi.org/10.1149/10701.15721ecst

Satyanaraya G , N Naga Varun . (2014). Exergy analysis of 210 Mw of Vijayawada Thermal Power Station (V.T.P.S). *International Journal of Latest Trends in Engineering and Technology (IJLTET)*

Shashank Singh , Sultan Ahmad , Bharat Asrani , S.S. Prabu , (2023). Comparative study on thermal analysis of battery module in an electric car, *AIP Conf. Proc.* 2869, 040017 https://doi.org/10.1063/5.0168490

Shridhar S. Thakar , Sannil Nambiar , Gaurav A, Chandavarkar , Sabapathy S P , (2021). Investigation of impingement cooling on a heat sink using CFD simulation, *Materials Today: Proceedings*, 46 (17) 8753–8760. https://doi.org/10.1016/j.matpr.2021.04.066

Sinan Karakurt , Ümit Güneş . (2016). Performance analysis of a steam turbine power plant at part load conditions. *Journal of Thermal Engineering*.

Sumit Kalipada Sau , Kuruvilla George Pulinat , Pratik Noel Moss , Pranav Ranjeet , Sabapathy S P , (2022). A comparative study on the thermal and dynamic analysis of a disc brake using Ansys, *Materials Today: Proceedings*, 65 (8) 3714–3723 https://doi.org/10.1016/j.matpr.2022.06.318

Vaishnav Madhavadas , Dibyarup Das , Kaustubh Anand Mohta , S.S. Prabu , (2021). Comparative analysis on heat transfer of various fin profile using solid works: A systematic review, *Earth and Environmental Science* 850, 012029. https://doi/10.1088/1755-1315/850/1/012029

Vedant Uddhavrao Chavan , Guruvasanth A S , Amay Rana , S. Senthur Prabu , (2022). Comparative Study on Thermal Analysis of Disc Brake Using ANSYS Simulation, *ECS Transactions*, 107 (1) 15693–15700 https://doi.org/10.1149/10701.15693ecst

Vemanaboina, Harinadh , Balram Yelamasetti , Jayaprakash Sharma Panchagnula , Naveen Kilari , Chander Prakash , Sandeep Kumar , and Husain Mehdi . (2025). Thermal and Mechanical Analysis of C-276 Alloy Using CO2 Laser Beam Welding Process. *Transactions of the Indian Institute of Metals* 78, no. 2. https://doi.org/10.1007/s12666-024-03476-9.

Venapusa Sravan , Himani Srivastava , Pandey Dhanraj Jitendra , Sabapathy S P , (2022). Investigation on Thermal Analysis of Spacecraft Radiators, *ECS Transactions*, 107 (1) 17073–17083 https://doi.org/10.1149/10701.17073ecst

Yong Li , Lei Liu . (2012). Exergy analysis of 300MW coal-fired power plant, *International Conference on Future Electrical Power and Energy Systems*

Design and performance of a Vortex tube configuration by Delrin metal

Prabakaran J. and Vaidyanathan S. (April 2010) Effect of Orifice and Pressure of Counter Flow Vortex Tube *IJST*.

Singh P K , Tathgir R G , Gangacharyulu , Grewal G.S. An Experimental Performance Evaluation of Vortex Tube

Chengming Gao . Experimental Study on the Ranque-Hilsch Vortex Tube PhD Thesis.

Nellis G.F. and Klein S.A. Application Of Vortex Tubes To Refrigeration Cycles

Giorgio De Vera . The Ranque-Hilsch Vortex Tube

Prabakaran J , Andvaidyanathan S , (2010) Effect of Diameter of Orifice and Nozzle on the Performance of Counter Flow Vortex Tube'', *IJEST Journal*.

Chang Q *, (2011) Experimental Investigation Of Vortex Tube Refrigerator With A Divergent Hot Tube, *International Journal of refrigeration*, 34, pp. 322-327

Ranque GJ (1933) Experiments on expansion in a vortex with simultaneous exhaust of hot air and cold air J PhysRadium (Paris) 4 112-4 S-115, June. *Also translated as General Electric Co.*, Schenectady WorksLibrary 1947; T.F. 3294

Ranque GJ (1934) Method and apparatus for obtaining from a fluid under pressure two outputs of fluid at different temperatures US patent 1 952 281

Colgate SA and Buchler JR (2000) Coherent transport of angular momentum-the Ranque–Hilsch tube a paradigm, astrophysical turbulence and convection Ann NY A cad Sci 898 105-12

Rao KKK , Reddy BVM , Ramesh A and Dennes MT (2016). Experimental analysis of vortex tube made of homogeneous wood. *International Journal of Engineering Research & Technology (IJERT)* 5 April

Guillaume DW and Jolly JL (2001). Demonstrating the achievement of the lower temperatures with two-stage vortex tubes. Rev SciInstrum 72 3446-8

Manohar R and Chetan R (2002) Enrichment of methane concentration via separation of gases using vortex tubes. *J Energy Eng* 128 1-12

Eiamsa-Ard S and Promvonge P (2006) Numerical prediction of vortex flow and thermal separation in a subsonic vortex tube. *J Zhejiang Univ SCI IntApplPhysEng J* 7 1406-15

Eiamsa-Ard S and Promvonge P (2007) Numerical investigation of the thermal separation in a Ranque–Hilsch vortex tube *Int J Heat Mass Transfe*r 50 821-32

Arroju P , Panchagnula KK , Saritha P , Nune MM , Madhura K , Kumar JS , Vemanaboina H , Naidu GG (2023 May 26). Analysis of residual stress in SS321 laser butt-welded plates using finite element analysis. *International Journal on Interactive Design and Manufacturing (IJIDeM)*.:1-6.

Reddy KS , Purushotham A , Kala KL , Gupta MS , Kumar PK , Vemanaboina H. (2023). Thermal mapping of SS316L experimental and simulation for GTA welding process with moving heat source model using FEA. *International Journal on Interactive Design and Manufacturing (IJIDeM)*.:1-9.

Vemanaboina H , Kunduru KR , Kumar PK , Goud RR , Gowd GH (2024 Apr 1). Mechanical properties of CO2 laser beam butt-welded plates of Hastelloy c-276. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*:09544089241239620.

Vemanaboina H , Venugopal C , Kotthinti NK Thermal and mechanical analysis of multipass SS316L using GTAW process. *Materials Today: Proceedings*. 2021 Jan 1;46:562-6.

Vemanaboina H , Kotthinti NK , Chittemsetty V. Multipass dissimilar joints for SS316L to Inconel625 using gas tungsten arc welding. *Materials Today: Proceedings*.46:567-71.

Reddy KS , Vemanaboina H , Naidu BV , Yelamasetti B , Bridjesh P , Shelare SD (2021). Minimizing distortion in multi-pass GTAW welding of SS316L structures: a Taguchi approach. *International Journal on Interactive Design and Manufacturing (IJIDeM)*. 2023 Sep 15:1-8.

Ramesh G , Sudarsanam M , Mahamani A , Babu KD , Shajiya SA (2023). Evaluation of mechanical properties of recycled AA6061-copper composite metallic materials. *AIP Conference Proceedings*. http://dx.doi.org/10.1063/5.0168312

Ramesh G , Rao KVNVN , Reddivaraprasad K , Rupesh A. (2023) Design and performance evaluation of a vortex tube form by gun metal. *AIP Conference Proceedings*.http://dx.doi.org/10.1063/5.0168311

Finite element fatigue analysis of Notched F55 super duplex stainless steel

Ai W , Zheng S , Zeng X , Cheng H , (2023). Literature review of phase transformations and cavitation erosion of duplex stainless steels, *Journal of Materials Science and Chemical Engineering*, Vol. 11, No. 12, pp. 10–21, https://doi.org/10.4236/msce.2023.1112002.

Cui C , Stern F , Ellendt N , Uhlenwinkel V , Steinbacher M , Tenkamp J , Walther F , Fechte-Heinen R , (2023). Gas atomization of duplex stainless steel powder for laser powder bed fusion, *Materials*, Vol. 16, No. 1, https://doi.org/10.3390/ma16010435.

Gopal M , Gutema E M , (2021). Factors affecting and optimization methods used in machining duplex stainless steel - A critical review; *Journal of Engineering Science and Technology Review*, Vol. 14, No. 2, pp. 119–135, https://doi.org/10.25103/jestr.142.16.

Hamad M W , Hassan A R , Abdullah A S A , (2021). Materials and corrosion in seawater reverse osmosis plants: A review, *Malaysian Journal of Applied Sciences*, Vol. 8, No. 1, pp. 74-94, https://doi.org/10.37231/myjas.2023.8.1.354.

Jiang X , Cao D , Qiang X , Xu C , (2024). Study on fatigue performance of steel bridge welded joints considering initial defects, *Journal of Constructional Steel Research*, Vol. 212, Article 108309, https://doi.org/10.1016/j.jcsr.2023.108309.

Lu K , Du L , Xu Q , Yao Y , Wang J , (2023). Fatigue performance of stud shear connectors in steel-concrete composite beam with initial damage, *Engineering Structures*, Vol. 276, Article 115381, https://doi.org/10.1016/j.engstruct.2022.115381.

Morales-Rivas L , Azadi A , Kerscher E , (2023). Short fatigue crack growth in an artificial-defect-containing nanostructured bainitic steel, *International Journal of Fatigue*, Vol. 166, Article 107219 https://doi.org/10.1016/j.ijfatigue.2022.107219.

Paul S K , (2023). Effect of forming strain on low cycle, high cycle and notch fatigue performance of automotive grade dual phase steels: A review, *Forces in Mechanics*, Vol. 11, Article 100184, https://doi.org/10.1016/j.finmec.2023.100184.

Jagadesh Kumar J , Diwakar G , Satyanarayana VV (2019). *Impact of Notch Geometry on the Pressure Bearing Capacity of AISI 316L Austenitic Stainless Steel under Fatigue Loading*, Universal Journal of Mechanical Engineering, Vol. 7, No. 6, pp. 336 - 347, 2019, https://doi.org/10.13189/ujme.2019.070605.

Wang D.Q.Q. , Yao D.D.D.D. , Wang Q. , Gao Z.B. , Zhang Z.F. , Li X.W. (2023). Evaluating the fatigue property of S355J2W steel butt-welded joint: Multiple notch effects, *International Journal of Fatigue*, Vol. 167, Article 107362, 2023, https://doi.org/10.1016/j.ijfatigue.2022.107362.

Kalle Lipiäinen , Antti Ahola , Timo Björk , (2023). Fatigue performance of ultrahighstrength steel laser cut notches under variable amplitude loading, *Welding in the World*, Vol. 67, pp. 2235–2245, https://doi.org/10.1007/s40194-023-01544-0.

Davood Rahmatabadi , Kianoosh Soltanmohammadi , Mostafa Pahlavani , Mohammad Aberoumand , Elyas Soleyman , Ismaeil Ghasemi , Majid Baniassadi , Karen Abrinia , Mahdi Bodaghi , Mostafa Baghani , (2023).

Shape memory performance assessment of FDM 3D printed PLATPU composites by BoxBehnken response surface methodology, *The International Journal of Advanced Manufacturing Technology*, Vol. 127, pp. 935–950, https://doi.org/10.1007/s00170-023-11571-2.

Jagadesh Kumar J , (2020). Fatigue Analysis of Friction Welded Notched Marine Steels, Doctoral Thesis submitted to KLEF, Guntur, http://hdl.handle.net/10603/443346.

Leila Mousavi , Zahra Tamiji , Mohammad Reza Khoshayand (2018). Applications and opportunities of experimental design for the dispersive liquid–liquid microextraction method – A review, *Talanta*, Vol. 190, pp. 335-356, https://doi.org/10.1016/j.talanta.2018.08.002.

Handbook Committee, ASM Handbook Fatigue and Fracture, ASM International, Volume 19, ISBN No: 978-1-62708-193-1, 1996, https://doi.org/10.31399/asm.hb.v19.9781627081931.

Montgomery C , (1997). Design and Analysis of experiments, 4th edition, Wiley, New York.

Rao, G.S.P. , Sharma, P.J. , Akella, S. , Vemanaboina, H. , Singh, J. , Kantipudi, M.P. , Prakash, C. , Goh, K.W. , & Phong, D.T. (2025). Modeling and experimental comparison of residual stresses and microstructure in UNS S32507 welds using Gas Tungsten Arc and Laser Beam Welding processes. *Journal of Materials Research and Technology*, 38, 782–791. https://doi.org/10.1016/j.jmrt.2025.07.254

Panchagnula, J.S. , Kunduru, K.R. , Rao, K.V.N.V.N. , Vemanaboina, H. , Gowd, G.H. , Paramasivam, P. , & Bommu, P. (2024). Microstructure and residual stress distribution of dissimilar joints of SS321 to Hastelloy C-276 using CO2 Laser Beam Welding: An experimental validation. *AIP Advances*, 14(12). https://doi.org/10.1063/5.0222415

Yelamasetti, B. , Panchagnula, J.S. , Padamurthy, A. , Vemanaboina, H. , Prakash, C. , & Paramasivam, P. (2024). Microstructure and mechanical analysis of SS321 in CO2 laser beam welding joint. *The International Journal of Advanced Manufacturing Technology*, 135(11–12), 5861–5874. https://doi.org/10.1007/s00170-024-14850-8

Comprehensive thermal evaluation of jet turbine blades utilizing ansys simulation

Arin Mishra , Aman Mehrotra , S. Prabu , (2022). Study on performance analysis of a solar air heater with Aerofoil Shaped Rib Roughness using CFD, *ECS Transactions*, 107 (1), 16065–16079 https://doi.org/10.1149/10701.16065ecst

Arkadeep Mukherjee , Naman Bhargava , Parth Mathur , Kanneboina Varun , S.S. Prabu , (2022). Investigation on performance evaluation and thermal and structural analysis of steam turbine blades, *ECS Transactions*, 107 (1) 18435–18445 https://doi.org/10.1149/10701.18435ecst

Aryan Srivastava , Piyush Kumar Singh , Shivam Sinha , Tarkesh Deore , Pranav Akotkar , S. Senthur Prabu , (2023). Investigation on thermal analysis of different pin fin materials using simulation *AIP Conf. Proc.* 2869, 040007 https://doi.org/10.1063/5.0168483

Ashwanthram Gokule Rajendran , Saubhagya Sooradas , Prakhar Chandrakar , S.S. Prabu , (2022). Investigation of anodized aluminium heat sink using ansys simulation, *ECS Transactions*, 107 (1) 16459–16467 https://doi.org/10.1149/10701.16459ecst

Asokan M A , S S Prabu , Shikhar Kamesh , Wasiuddin Khan , (2018). Performance, combustion and emission characteristics of diesel engine *Energy* 145, 238–245, https://doi.org/10.1016/j.energy.2017.12.140

Asokan M A , Sabapathy S P , Esmail Khalife , K.A. Sanjey , S. Prathiba , (2024). Vibration analysis using wavelet transformation technique and performance characteristics of a diesel engine fueled with tamarind biodiesel-diesel blends and diverse additives, *Energy* 294, 130886 https://doi.org/10.1016/j.energy.2024.130886

Atharva Gurjar , Mohammed Moinuddin Shaikh , Siddhesh Ambilduke , Sabapathy S. P. (2022). A study on performance evaluation and thermal analysis of an automobile radiator, *ECS Transactions*, 107 (1) 16287–16295 https://doi.org/10.1149/10701.16287ecst

Daniel Abishai L , M.E. Surejlal , S. Sri Harish , S. Senthur Prabu , (2021). Investigation on the effect of thermal properties by change in materials of the air conditioner condenser tube using simulation, *Materials Today: Proceedings*, 45 (2) 2671–2677. https://doi.org/10.1016/j.matpr.2020.11.520

Devender, B. , P. Kishore Kumar , K. Lakshmi Kala , and Harinadh Vemanaboina . (2023). Modeling and flow analysis of FDM based dual extruder. *Materials Today: Proceedings*, https://doi.org/10.1016/j.matpr.2023.03.794.

Emel V. Kurian , S S Prabu , (2021). Experimental investigation of waste heat recovery from the disposal of ammonium perchlorate *Materials Today: Proceedings*, 46 (17) 8045–8050

Hardik Shukla , Sai Sravan Yarlagadda , Akshay Badagabettu , Sai Santosh Thatikonda , S.S. Prabu , (2022). Analyses of rear landing gear of a UAV using carbon fibre composites, *ECS Transactions*, 107 (1) 16157–16165 https://doi.org/10.1149/10701.16157ecst

Harshita Pant , Divyanshi Shukla , Shriya Rathor , S.S. Prabu , (2021). Heat transfer analysis on different pin fin types using solid works, *Earth and Environmental Science* 850, 012028. https://doi/10.1088/1755-1315/850/1/012028

Hrishikesh Rajesh Kumar , Arun Antony M T , Shyam S Warrier , Sabapathy S P , (2021). Comparative study on thermal analysis of extended surface using ANSYS simulation, *ECS Transactions*, 107 (1), 12209–12219 https://doi.org/10.1149/10701.12209ecst

Kamalesh, Krishnaraj , Thamizharasan, Sivamani , S.S. Prabu , (2023), Investigation on steady state thermal analysis of disc brake using ANSYS simulation, *AIP Conf. Proc.* 2869, 040009 https://doi.org/10.1063/5.0168485

Kartik Chaturvedi , Krishnansh Pandey , Mohammed Ahmad Siddiqui , Kunal Burarak , S. Senthur Prabu , (2023). Comparative study on thermal analysis of disc brake using ANSYS simulation, *AIP Conf. Proc.* 2869, 040015 https://doi.org/10.1063/5.0168487

Kaustubh Anand Mohta , Vaishnav Madhavadas , Dibyarup Das , Nevan Nicholas Johnson , Sabapathy S P , (2022). Comparative study on thermal properties of 3D printed and conventional fins, *ECS Transactions*, 107 (1) 14555–14574 https://doi.org/10.1149/10701.14555ecst

Keshavan, Jayendra , Dhrunil, Jeffrey , S. Senthur Prabu , (2023). Comparative study on performance of heat fins of varying design specifications, *AIP Conf. Proc.* 2869, 040003 https://doi.org/10.1063/5.0168479

Kshitij Desai , Gaurav Lakra , Rithuvik Rajesh , S.S. Prabu , (2021). Investigation on the effect of thermal properties by changing geometry of a heat pipe using simulation, *Materials Today: Proceedings*, 46 (17) 8473–8479. https://doi.org/10.1016/j.matpr.2021.03.491

Kunal Burarak , Gaurav Mishra , Kamlesh Kumar , Sabapathy S P , (2023). Investigation on static structural and steady state thermal analysis of an engine piston using ANSYS simulation *AIP Conf. Proc.* 2869, 040013, https://doi.org/10.1063/5.0168486

Maridinapalli Sai Kiran Karthik , Havish Karanam Ramendra Karanam , Sabapathy S P , (2022). Experimental and thermal analysis of desktop FDM 3D Printers “Ender 3” and “CR-10S Pro” Hot Ends, *ECS Transactions*, 107 (1) 12851–12862 https://doi.org/10.1149/10701.12851ecst

Mohammed Rayyan Khan , Digvijay Singh Choudhary , Sabapathy S P , (2022). A study on performance evaluation of solar PV air conditioning system using simulation, ECS Transactions, 107 (1) 16747–16755 https://doi.org/10.1149/10701.16747ecst

Morappur Ammasi Asokan , S S Prabu , (2022). Effect of n-butanol on cotton seed oil biodiesel: an approach for improving the emission behavior of DI diesel engine, *Petroleum Science and Technology*, 41 (11), 1162–1180 https://doi.org/10.1080/10916466.2022.2092131

Mugilan M , K.S. Devendra , M. Danish , S.S. Prabu , (2022). Investigation on thermal analysis of disc brake using Autodesk Fusion 360, *Materials Today: Proceedings*, 65 (8) 3707–3713 https://doi.org/10.1016/j.matpr.2022.06.313

Neel Agarwal , Sai Sravan Yarlagadda , Sai Santosh Thatikonda and S.S. Prabu , (2022). An investigation of Ti-6Al-4V brake disc using ansys simulation, *ECS Transactions*, 107 (1) 8711–8719. https://doi.org/10.1149/10701.8711ecst

Nihal Chavan , Rushikesh Pote , Dishant Bhor , Sabapathy S P , (2023). Comparative thermal analysis on the extended surface of an automobile engine cylinder using ANSYS simulation, *AIP Conf. Proc.* 2869, 040006, https://doi.org/10.1063/5.0168481

Panchagnula JS , Kunduru KR , Rao KVNVN , Vemanaboina H , Gowd GH , Paramasivam P , et al. (2024). Microstructure and residual stress distribution of dissimilar joints of SS321 to Hastelloy C-276 using CO2 Laser Beam Welding: An experimental validation. *AIP Advances*. 14(12). http://dx.doi.org/10.1063/5.0222415

Panchagnula, Jayaprakash Sharma , Krishnamohan Reddy Kunduru , K.V.N.V.N. Rao , Harinadh Vemanaboina , G. Harinath Gowd , Prabhu Paramasivam , and Padmaja Bommu . 2024. Microstructure and residual stress distribution of dissimilar joints of SS321 to Hastelloy C-276 using CO2 laser beam welding: An experimental validation. *AIP Advances* 14, no. 12. https://doi.org/10.1063/5.0222415.

Prabu S S , (2019). Investigating the influence of titanium on wear characteristics of P/M hot extruded alloy steels, *Materials Research Express*, 6, 106548

Prabu S S , M.A. Asokan , S. Prathiba , Shakkeel Ahmed , George Puthean , (2018). Effect of additives on performance, combustion and emission behavior in diesel engine *Renewable Energy* 122, 196–205, https://doi.org/10.1016/j.renene.2018.01.068

Pranav Joshi , Sushovan Samantray , S. Senthur Prabu , (2022). Investigation on Thermal Stress Analysis of Brake Disc Using ANSYS Simulation, ECS Transactions, 107 (1) 10865–10875 https://doi.org/10.1149/10701.10865ecst

Reddy KS , Purushotham A , Kala KL , Gupta MS , Kumar PK , Vemanaboina H. (2023). Thermal mapping of SS316L experimental and simulation for GTA welding process with moving heat source model using FEA. *International Journal on Interactive Design and Manufacturing (IJIDeM)*, 18(5):2755–63. http://dx.doi.org/10.1007/s12008-023-01310-y

Rishabh Prasad , Vidit Kohad , Hrithik Ray , Sabapathy S P , (2023). Thermal analysis of different design of fins with different materials, AIP Conf. Proc. 2869, 040004 https://doi.org/10.1063/5.0168477

Sabapathy S P , Asokan Morappur Ammasi , Esmail Khalife , Mohammad Kaveh , Mariusz Szymanek , Gokul Kuruvakkattu Reghu and Prathiba Sabapathy , Comprehensive Assessment from Optimum Biodiesel Yield to Combustion Characteristics of Light Duty Diesel Engine Fueled with Palm Kernel Oil Biodiesel and Fuel Additives, *Materials* 2021 (14) 4274. 1–23 https://doi.org/10.3390/ma14154274

Sabapathy S P , M.A. Asokan , Rahul Roy , Steff Francis , M.K. Sreelekh , (2017). Performance, combustion and emission characteristics of diesel engine. *Energy* 122, 638–648, http://dx.doi.org/10.1016/j.energy.2017.01.119

Sabapathy S Prabu , Asokan Morappur Ammasi , Esmail Khalife , Musthafa Babu , Saravanan Munusamy , Prathiba Sabapathy , Ayat Gharehghani , Mariusz Szymanek , Mohammad Kaveh , (2025). Optimization of injection timing and ethyl hexyl nitrate additive effects on diesel engine characteristics using rubber seed oil biodiesel, *International Journal of Energy Research*, Volume 2025, Article ID 1686933, 1–14, https://doi.org/10.1155/er/1686933

Satvik Kandregula , Suhail Khan M N , Gautam Batra , C.V.S. Anirudh , Prateek Yash , S. Senthur Prabu , (2022). Comparative study on thermal and structural analysis of perimetric disc brake using ANSYS, *ECS Transactions*, 107 (1) 15721–15732 https://doi.org/10.1149/10701.15721ecst

Shashank Singh , Sultan Ahmad , Bharat Asrani , S.S. Prabu , (2023). Comparative study on thermal analysis of battery module in an electric car, *AIP Conf. Proc.* 2869, 040017 https://doi.org/10.1063/5.0168490

Shridhar S. Thakar , Sannil Nambiar , Gaurav A, Chandavarkar , Sabapathy S P , (2021). Investigation of impingement cooling on a heat sink using CFD simulation, *Materials Today: Proceedings*, 46 (17) 8753–8760. https://doi.org/10.1016/j.matpr.2021.04.066

Sumit Kalipada Sau , Kuruvilla George Pulinat , Pratik Noel Moss , Pranav Ranjeet , Sabapathy S P , (2022). A comparative study on the thermal and dynamic analysis of a disc brake using Ansys, *Materials Today: Proceedings*, 65 (8) 3714–3723 https://doi.org/10.1016/j.matpr.2022.06.318

Uppalapati, Sudhakar , Jayaprakash Sharma Panchagnula , Vishnu Vardhana Naidu B. , Harinadh Vemanaboina , Prabhu Paramasivam , and Mohamed Yusuf . (2025). Thermally induced residual stresses in SS321 welded joints using CO2 laser beam: FEA and experimental study. *AIP Advances* 15, no. 6. https://doi.org/10.1063/5.0257720.

Vaishnav Madhavadas , Dibyarup Das , Kaustubh Anand Mohta , S.S. Prabu , (2021). Comparative analysis on heat transfer of various fin profile using solid works: a systematic review, *Earth and Environmental Science* 850, 012029. https://doi/10.1088/1755-1315/850/1/012029

Vedant Uddhavrao Chavan , Guruvasanth A S , Amay Rana , S. Senthur Prabu , (2022). Comparative study on thermal analysis of disc brake using ANSYS simulation, *ECS Transactions*, 107 (1) , 15693–15700 https://doi.org/10.1149/10701.15693ecst

Vemanaboina, Harinadh , Balram Yelamasetti , Jayaprakash Sharma Panchagnula , Naveen Kilari , Chander Prakash , Sandeep Kumar , and Husain Mehdi . (2025). Thermal and mechanical analysis of C-276 alloy using CO2 laser beam welding process. *Transactions of the Indian Institute of Metals* 78, no. 2. https://doi.org/10.1007/s12666-024-03476-9.

Vemanaboina, Harinadh , Chittemsetty Venugopal , and Nagendra Kumar Kotthinti . (2021). Thermal and mechanical analysis of multipass SS316L using GTAW process. *Materials Today: Proceedings* 46: 562–66. https://doi.org/10.1016/j.matpr.2020.11.284.

Vemanaboina, Harinadh , Edison Gundabattini , Kaushik Kumar , Paolo Ferro , and B Sridhar Babu . (2021). Thermal and residual stress distributions in inconel 625 buttwelded plates: simulation and experimental validation. *Advances in Materials Science and Engineering*. https://doi.org/10.1155/2021/3948129.

Venapusa Sravan , Himani Srivastava , Pandey Dhanraj Jitendra , Sabapathy S P , (2022). Investigation on thermal analysis of spacecraft radiators, *ECS Transactions*, 107 (1), 17073–17083 https://doi.org/10.1149/10701.17073ecst

Comparative study on thermal analysis of CPU square profile fins by analysing the effects of different materials

Arin Mishra , Aman Mehrotra , S. Prabu , (2022). Study on performance analysis of a solar air heater with aerofoil shaped rib roughness using CFD", *ECS Transactions*, 107 (1) 16065-16079 https://doi.org/10.1149/10701.16065ecst

Arkadeep Mukherjee , Naman Bhargava , Parth Mathur , Kanneboina Varun , S.S. Prabu , (2022). Investigation on performance evaluation and thermal and structural analysis of steam turbine blades, *ECS Transactions,* 107 (1) 18435-18445 https://doi.org/10.1149/10701.18435ecst

Aryan Srivastava , Piyush Kumar Singh , Shivam Sinha , Tarkesh Deore , Pranav Akotkar , S. Senthur Prabu , (2023). Investigation on thermal analysis of different pin fin materials using simulation. *AIP Conf. Proc.* 2869, 040007, https://doi.org/10.1063/5.0168483

Ashwanthram Gokule Rajendran , Saubhagya Sooradas , Prakhar Chandrakar , S.S. Prabu , (2022). Investigation of Anodized Aluminium Heat Sink Using Ansys Simulation, *ECS Transactions*, 107 (1), 16459-16467 https://doi.org/10.1149/10701.16459ecst

Atharva Gurjar , Mohammed Moinuddin Shaikh , Siddhesh Ambilduke , Sabapathy S P , (2022). A Study on Performance Evaluation and Thermal Analysis of an Automobile Radiator, *ECS Transactions*, 107 (1) 16287-16295 https://doi.org/10.1149/10701.16287ecst

Hardik Shukla , Sai Sravan Yarlagadda , Akshay Badagabettu , Sai Santosh Thatikonda , S.S. Prabu , (2022). Analyses of Rear Landing Gear of a UAV Using Carbon Fibre Composites, *ECS Transactions*, 107 (1) 16157-16165 https://doi.org/10.1149/10701.16157ecst

Harshita Pant , Divyanshi Shukla , Shriya Rathor , S.S. Prabu , (2021). Heat Transfer Analysis on Different Pin Fin Types Using Solid Works, *Earth and Environmental Science* 850, 012028. https://doi/10.1088/1755-1315/850/1/012028

Hrishikesh Rajesh Kumar , Arun Antony M T , Shyam S Warrier , Sabapathy S P , (2022). Comparative study on thermal analysis of extended surface using ANSYS simulation, *ECS Transactions*, 107 (1) 12209-12219 https://doi.org/10.1149/10701.12209ecst

Kamalesh, Krishnaraj , Thamizharasan, Sivamani , S.S. Prabu , (2023). Investigation on steady state thermal analysis of disc brake using ANSYS simulation, *AIP Conf. Proc.* 2869, 040009, https://doi.org/10.1063/5.0168485

Kartik Chaturvedi , Krishnansh Pandey , Mohammed Ahmad Siddiqui , Kunal Burarak , S. Senthur Prabu , (2023). Comparative study on thermal analysis of disc brake using ANSYS simulation, *AIP Conf. Proc.* 2869, 040015, https://doi.org/10.1063/5.0168487

Kaustubh Anand Mohta , Vaishnav Madhavadas , Dibyarup Das , Nevan Nicholas Johnson , Sabapathy S P , (2022). Comparative Study on Thermal Properties of 3D Printed and Conventional Fins, *ECS Transactions* , 107 (1), 14555-14574 https://doi.org/10.1149/10701.14555ecst

Keshavan, Jayendra , Dhrunil, Jeffrey , S. Senthur Prabu , (2023). Comparative study on performance of heat fins of varying design specifications, *AIP Conf. Proc.* 2869, 040003, https://doi.org/10.1063/5.0168479

Kshitij Desai , Gaurav Lakra , Rithuvik Rajesh , S.S. Prabu , (2021). Investigation on the effect of thermal properties by changing geometry of a heat pipe using simulation, *Materials Today: Proceedings*, 46 (17) 8473-8479. https://doi.org/10.1016/j.matpr.2021.03.491

Kunal Burarak , Gaurav Mishra , Kamlesh Kumar , Sabapathy S P , (2023). Investigation on static structural and steady state thermal analysis of an engine piston using ANSYS simulation *AIP Conf. Proc.* 2869, 040013, https://doi.org/10.1063/5.0168486

Prabu, S.S. (2019). Investigating the influence of titanium on wear characteristics of P/M hot extruded alloy steels, *Materials Research Express*, 6, 106548

Daniel Abishai L. , M.E. Surejlal , S. Sri Harish , S. Senthur Prabu , (2021). Investigation on the effect of thermal properties by change in materials of the air conditioner condenser tube using simulation, *Materials Today: Proceedings*, 45 (2) 2671-2677. https://doi.org/10.1016/j.matpr.2020.11.520

Mugilan M. , K.S. Devendra , M. Danish , S.S. Prabu , (2022). Investigation on thermal analysis of disc brake using Autodesk Fusion 360, *Materials Today: Proceedings*, 65 (8) 3707-3713 https://doi.org/10.1016/j.matpr.2022.06.313

Mohammed Rayyan Khan , Digvijay Singh Choudhary , Sabapathy S P , (2022). A study on performance evaluation of solar PV air conditioning system using simulation, *ECS Transactions*, 107 (1), 16747-16755 https://doi.org/10.1149/10701.16747ecst

Neel Agarwal , Sai Sravan Yarlagadda , Sai Santosh Thatikonda and S.S. Prabu , (2022). An investigation of Ti-6Al-4V brake disc using ansys simulation, *ECS Transactions*, 107 (1) 8711-8719 https://doi.org/10.1149/10701.8711ecst

Nihal Chavan , Rushikesh Pote , Dishant Bhor , Sabapathy S P , (2023). Comparative thermal analysis on the extended surface of an automobile engine cylinder using ANSYS simulation, *AIP Conf. Proc.* 2869, 040006, https://doi.org/10.1063/5.0168481

Pranav Joshi , Sushovan Samantray , S. Senthur Prabu , (2022). Investigation on thermal stress analysis of brake disc using ANSYS simulation, *ECS Transactions*, 107 (1) 10865-10875 https://doi.org/10.1149/10701.10865ecst

Rishabh Prasad , Vidit Kohad , Hrithik Ray , Sabapathy S P , (2023). Thermal analysis of different design of fins with different materials, *AIP Conf. Proc.* 2869, 040004, https://doi.org/10.1063/5.0168477

Satvik Kandregula , Suhail Khan M N , Gautam Batra , C.V.S. Anirudh , Prateek Yash , S. Senthur Prabu , (2022). Comparative study on thermal and structural analysis of perimetric disc brake using ANSYS, *ECS Transactions*, 107 (1) 15721-15732 https://doi.org/10.1149/10701.15721ecst

Shridhar S. Thakar , Sannil Nambiar , Gaurav A, Chandavarkar , Sabapathy S P , (2021). Investigation of impingement cooling on a heat sink using CFD simulation, *Materials Today: Proceedings*, 46 (17) 8753-

8760. https://doi.org/10.1016/j.matpr.2021.04.066
Sumit Kalipada Sau , Kuruvilla George Pulinat , Pratik Noel Moss , Pranav Ranjeet , Sabapathy S P , (2022) A comparative study on the thermal and dynamic analysis of a disc brake using Ansys, *Materials Today: Proceedings*, 65 (8) 3714-3723 https://doi.org/10.1016/j.matpr.2022.06.318
Vaishnav Madhavadas , Dibyarup Das , Kaustubh Anand Mohta , S.S. Prabu , (2021). Comparative Analysis on Heat Transfer of Various Fin Profile using Solid Works: A Systematic Review, *Earth and Environmental Science* 850, 012029. https://doi/10.1088/1755-1315/850/1/012029
Vedant Uddhavrao Chavan , Guruvasanth A S , Amay Rana , S. Senthur Prabu , (2022). Comparative Study on Thermal Analysis of Disc Brake Using ANSYS Simulation, *ECS Transactions*, 107 (1), 15693-15700 https://doi.org/10.1149/10701.15693ecst
Venapusa Sravan , Himani Srivastava , Pandey Dhanraj Jitendra , Sabapathy S P , (2022). Investigation on Thermal Analysis of Spacecraft Radiators, ECS *Transactions*, 107 (1) 17073-17083 https://doi.org/10.1149/10701.17073ecst
Vemanaboina, Harinadh , Balram Yelamasetti , Jayaprakash Sharma Panchagnula , Naveen Kilari , Chander Prakash , Sandeep Kumar , and Husain Mehdi . (2025). “Thermal and Mechanical Analysis of C-276 Alloy Using CO2 Laser Beam Welding Process.” *Transactions of the Indian Institute of Metals* 78, no. 2. https://doi.org/10.1007/s12666-024-03476-9.
Reddy KS , Purushotham A , Kala KL , Gupta MS , Kumar PK , Vemanaboina H. (2023) Thermal mapping of SS316L experimental and simulation for GTA welding process with moving heat source model using FEA. *International Journal on Interactive Design and Manufacturing (IJIDeM)*. 18(5):2755–63. http://dx.doi.org/10.1007/s12008-023-01310-y
Vemanaboina, Harinadh , Edison Gundabattini , Kaushik Kumar , Paolo Ferro , and B Sridhar Babu . (2021). “Thermal and residual stress distributions in inconel 625 buttwelded plates: simulation and experimental validation.” *Advances in Materials Science and Engineering*. https://doi.org/10.1155/2021/3948129.
Panchagnula JS , Kunduru KR , Rao KVNVN , Vemanaboina H , Gowd GH , Paramasivam P , et al. (2024). Microstructure and residual stress distribution of dissimilar joints of SS321 to Hastelloy C-276 using CO2 Laser Beam Welding: An experimental validation. *AIP Advances*. 14(12). http://dx.doi.org/10.1063/5.0222415
Uppalapati, Sudhakar , Jayaprakash Sharma Panchagnula , Vishnu Vardhana Naidu B. , Harinadh Vemanaboina , Prabhu Paramasivam , and Mohamed Yusuf . (2025). “Thermally induced residual stresses in SS321 welded joints using CO2 laser beam: FEA and experimental study.” *AIP Advances* 15, no. 6. https://doi.org/10.1063/5.0257720.

Exploring variations for enhanced strength to weight ratios in Remote Controlled (RC) aviation airfoil truss design structures

Adamus ; Piotr Lacki (2014) Analysis of Forming Titanium Welded Blanks, *Computational Materials Science*.
Alexis Lefebvre ; Gecheng Zha ; (2016). Trade Study of 3D Co-flow Jet Wing for Cruise and Takeoff/landing Performance.
Arin Mishra , Aman Mehrotra , S. Senthur Prabu , (2022). Study on Performance Analysis of a Solar Air Heater with Aerofoil Shaped Rib Roughness Using CFD, *ECS Transactions*, 107 (1) 16065-16079 https://doi.org/10.1149/10701.16065ecst
Arkadeep Mukherjee , Naman Bhargava , Parth Mathur , Kanneboina Varun , S. Senthur Prabu , (2022). Investigation on Performance Evaluation and Thermal and Structural Analysis of Steam Turbine Blades, *ECS Transactions*, 107 (1) 18435-18445 https://doi.org/10.1149/10701.18435ecst
Aryan Srivastava , Piyush Kumar Singh , Shivam Sinha , Tarkesh Deore , Pranav Akotkar , S. Senthur Prabu , (2023). Investigation on thermal analysis of different pin fin materials using simulation *AIP Conf. Proc.* 2869, 040007 https://doi.org/10.1063/5.0168483
Ashwanthram Gokule Rajendran , Saubhagya Sooradas , Prakhar Chandrakar , S. Senthur Prabu , (2022). Investigation of Anodized Aluminium Heat Sink Using Ansys Simulation, *ECS Transactions*, 107 (1) 16459-16467 https://doi.org/10.1149/10701.16459ecst
Atharva Gurjar , Mohammed Moinuddin Shaikh , Siddhesh Ambilduke , S. Senthur Prabu , (2022). A Study on Performance Evaluation and Thermal Analysis of an Automobile Radiator, *ECS Transactions*, 107 (1) 16287-16295 https://doi.org/10.1149/10701.16287ecst
Daniel Abishai , M.E. Surejlal , S. Sri Harish , S. Senthur Prabu , (2021). Investigation on the effect of thermal properties by change in materials of the air conditioner condenser tube using simulation, *Materials Today: Proceedings*, 45 (2) 2671-2677. https://doi.org/10.1016/j.matpr.2020.11.520
Hardik Shukla , Sai Sravan Yarlagadda , Akshay Badagabettu , Sai Santosh Thatikonda , S. Senthur Prabu , (2022). Analyses of Rear Landing Gear of a UAV Using Carbon Fibre Composites, *ECS Transactions*, 107

(1) , 16157-16165 https://doi.org/10.1149/10701.16157ecst
Harshita Pant , Divyanshi Shukla , Shriya Rathor , S. Senthur Prabu , (2021). Heat Transfer Analysis on Different Pin Fin Types Using Solid Works, *Earth and Environmental Science* 850 , 012028. https://doi/10.1088/1755-1315/850/1/012028
Hrishikesh Rajesh Kumar , Arun Antony M T , Shyam S Warrier , S. Senthur Prabu , (2022). Comparative Study on Thermal Analysis of Extended Surface Using ANSYS Simulation, *ECS Transactions*, 107 (1) 12209-12219 https://doi.org/10.1149/10701.12209ecst
Ibrahim ; J Mueller ; L Wagner ; (2007). Correlation Between Microstructure And Fatigue Property of Ti-6Al-4V Alloy Used in Aerospace Applications.
Kamalesh, Krishnaraj , Thamizharasan, Sivamani , S. Senthur Prabu , (2023). Investigation on steady state thermal analysis of disc brake using ANSYS simulation, *AIP Conf. Proc.* 2869, 040009 https://doi.org/10.1063/5.0168485
Kartik Chaturvedi , Krishnansh Pandey , Mohammed Ahmad Siddiqui , Kunal Burarak , S. Senthur Prabu , (2023). Comparative study on thermal analysis of disc brake using ANSYS simulation", *AIP Conf. Proc.* 2869, 040015 https://doi.org/10.1063/5.0168487
Kaustubh Anand Mohta , Vaishnav Madhavadas , Dibyarup Das , Nevan Nicholas Johnson , S. Senthur Prabu , Comparative Study on Thermal Properties of 3D Printed and Conventional Fins, *ECS Transactions*, 107 (1) 14555-14574 https://doi.org/10.1149/10701.14555ecst
Keith ; B.P. Selberg (1984). Aerodynamic Design Optimization Trim Analysis of Canard Conventional Configurations, *Journal of Aircraft*.
Keith ; B.P. Selberg ; (1983). Aerodynamic Optimization, Comparison, and Trim Design of Canard and Conventional High-Performance General Aviation Configurations.
Keshavan, Jayendra , Dhrunil, Jeffrey , S. Senthur Prabu , (2023). Comparative study on performance of heat fins of varying design specifications, AIP Conf. Proc. 2869, 040003 https://doi.org/10.1063/5.0168479
Kshitij Desai , Gaurav Lakra , Rithuvik Rajesh , S. Senthur Prabu , (2021). Investigation on the effect of thermal properties by changing geometry of a heat pipe using simulation, *Materials Today: Proceedings*, 46 (17) 8473-8479. https://doi.org/10.1016/j.matpr.2021.03.491
Kunal Burarak , Gaurav Mishra , Kamlesh Kumar , S. Senthur Prabu , (2023). Investigation on static structural and steady state thermal analysis of an engine piston using ANSYS simulation AIP Conf. Proc. 2869, 040013 https://doi.org/10.1063/5.0168486
Maridinapalli Sai Kiran Karthik , Havish Karanam Ramendra Karanam , S. Senthur Prabu , (2022). Experimental and Thermal Analysis of Desktop FDM 3D Printers Ender 3 and CR-10S Pro Hot Ends, *ECS Transactions*, 107 (1) 12851-12862 https://doi.org/10.1149/10701.12851ecst
Mohammad Hasan ; Jelena Svorcan ; Aleksandar Simonovic ; Nikola Mirkov ; Olivera Kostic ; (2021). Optimal Airfoil Design and Wing Analysis for Solar-powered High-altitude Platform Station, *Thermal Science*.
Mohammed Rayyan Khan , Digvijay Singh Choudhary , S. Senthur Prabu , (2022). A Study on Performance Evaluation of Solar PV Air Conditioning System Using Simulation, *ECS Transactions*, 107 (1) 16747-16755 https://doi.org/10.1149/10701.16747ecst
Morappur Ammasi Asokan , S S Prabu , (2022). Effect of n-butanol on cotton seed oil biodiesel: an approach for improving the emission behavior of DI diesel engine, *Petroleum Science and Technology*, 41 (11), 1162–1180 https://doi.org/10.1080/10916466.2022.2092131
Mugilan , K.S. Devendra , M. Danish , S. Senthur Prabu , (2022) Investigation on thermal analysis of disc brake using Autodesk Fusion 360, *Materials Today: Proceedings*, 65 (8) 3707-3713 https://doi.org/10.1016/j.matpr.2022.06.313
Neel Agarwal , Sai Sravan Yarlagadda , Sai Santosh Thatikonda and S. Senthur Prabu , (2022). An Investigation of Ti-6Al-4V Brake Disc Using Ansys Simulation, *ECS Transactions*, 107 (1) 8711-8719 https://doi.org/10.1149/10701.8711ecst
Nihal Chavan , Rushikesh Pote , Dishant Bhor , S. Senthur Prabu , (2023). Comparative thermal analysis on the extended surface of an automobile engine cylinder using ANSYS simulation, *AIP Conf. Proc.* 2869, 040006 https://doi.org/10.1063/5.0168481
Ning Zhao ; Lin Lin Sun ; Bi Bo Fu ; Hai Feng Li ; Qi Bo Wang ; (2014). Web Structural Optimization of The Big Aviation Herringbone Gear Based on APDL Language, *Applied Mechanics And Materials*.
Onur Bilgen ; Michael I. Friswell ; Kevin Kochersberger ; Daniel J. Inman ; (2011). Surface Actuated Variable-camber and Variable-twist Morphing Wings Using Piezocomposites.
Panchagnula JS , Kunduru KR , Rao KVNVN , Vemanaboina H , Gowd GH , Paramasivam P , et al. (2024 Dec 1). Microstructure and residual stress distribution of dissimilar joints of SS321 to Hastelloy C-276 using CO2 Laser Beam Welding: An experimental validation. *AIP Advances.*14(12). http://dx.doi.org/10.1063/5.0222415
Prabu S S , M.A. Asokan , S. Prathiba , Shakkeel Ahmed , George Puthean , (2018). Effect of additives on performance, combustion and emission behavior in diesel engine *Renewable Energy* 122, 196-205. https://doi.org/10.1016/j.renene.2018.01.068

Pranav Joshi , Sushovan Samantray , S. Senthur Prabu , (2022). Investigation on Thermal Stress Analysis of Brake Disc Using ANSYS Simulation, ECS Transactions, 107 (1) 10865-10875 https://doi.org/10.1149/10701.10865ecst

Rao, G. Surya Prakash , Panchagnula Jayaprakash Sharma , Suresh Akella , Harinadh Vemanaboina , Jasvinder Singh , MVV Prasad Kantipudi , Chander Prakash , Khang Wen Goh , and Dao Thanh Phong . (September 2025). Modeling and Experimental Comparison of Residual Stresses and Microstructure in UNS S32507 Welds Using Gas Tungsten Arc and Laser Beam Welding Processes. *Journal of Materials Research and Technology* 38 : 782–91. https://doi.org/10.1016/j.jmrt.2025.07.254.

Reddy KS , Purushotham A , Kala KL , Gupta MS , Kumar PK , Vemanaboina H. (2023). Thermal mapping of SS316L experimental and simulation for GTA welding process with moving heat source model using FEA. *International Journal on Interactive Design and Manufacturing (IJIDeM)*;18(5):2755–63. http://dx.doi.org/10.1007/s12008-023-01310-y

Rishabh Prasad , Vidit Kohad , Hrithik Ray , S. Senthur Prabu , (2023). Thermal analysis of different design of fins with different materials, *AIP Conf. Proc.* 2869, 040004 https://doi.org/10.1063/5.0168477

Sabapathy S P , M.A. Asokan , Rahul Roy , Steff Francis , M.K. Sreelekh , (2017). Performance, combustion and emission characteristics of diesel engine *Energy* 122, 638-648, http://dx.doi.org/10.1016/j.energy.2017.01.119

Satvik Kandregula , Suhail Khan M N , Gautam Batra , C.V.S. Anirudh , Prateek Yash , S. Senthur Prabu , (2022). Comparative study on thermal and structural analysis of perimetric disc brake using ANSYS, *ECS Transactions*, 107 (1), 15721-15732 https://doi.org/10.1149/10701.15721ecst

Shashank Singh , Sultan Ahmad , Bharat Asrani , S. Senthur Prabu , (2023). Comparative study on thermal analysis of battery module in an electric car, AIP Conf. Proc. 2869, 040017, https://doi.org/10.1063/5.0168490

Shridhar S. Thakar , Sannil Nambiar , Gaurav A, Chandavarkar , S. Senthur Prabu , (2021). Investigation of impingement cooling on a heat sink using CFD simulation, Materials Today: Proceedings 46 (17) 8753-8760. https://doi.org/10.1016/j.matpr.2021.04.066

Sumit Kalipada Sau , Kuruvilla George Pulinat , Pratik Noel Moss , Pranav Ranjeet , S. Senthur Prabu , (2022). A comparative study on the thermal and dynamic analysis of a disc brake using Ansys, *Materials Today: Proceedings*, 65 (8) 3714-3723 https://doi.org/10.1016/j.matpr.2022.06.318

Uppalapati, Sudhakar , Jayaprakash Sharma Panchagnula , Vishnu Vardhana Naidu B. , Harinadh Vemanaboina , Prabhu Paramasivam , and Mohamed Yusuf . (2025). Thermally Induced Residual Stresses in SS321 Welded Joints Using CO2 Laser Beam: FEA and Experimental Study. *AIP Advances* 15, no. 6. https://doi.org/10.1063/5.0257720.

Vaishnav Madhavadas , Dibyarup Das , Kaustubh Anand Mohta , S. Senthur Prabu , (2021). Comparative Analysis on Heat Transfer of Various Fin Profile using Solid Works: A Systematic Review, *Earth and Environmental Science* 850 012029. https://doi/10.1088/1755-1315/850/1/012029

Vedant Uddhavrao Chavan , Guruvasanth A S , Amay Rana , S. Senthur Prabu , (2022). Comparative Study on Thermal Analysis of Disc Brake Using ANSYS Simulation, *ECS Transactions*, 107 (1) 15693-15700 https://doi.org/10.1149/10701.15693ecst

Vemanaboina, Harinadh , Balram Yelamasetti , Jayaprakash Sharma Panchagnula , Naveen Kilari , Chander Prakash , Sandeep Kumar , and Husain Mehdi . (2025). Thermal and Mechanical Analysis of C-276 Alloy Using CO2 Laser Beam Welding Process. *Transactions of the Indian Institute of Metals* 78, no. 2. https://doi.org/10.1007/s12666-024-03476-9.

Venapusa Sravan , Himani Srivastava , Pandey Dhanraj Jitendra , S. Senthur Prabu , (2022). Investigation on Thermal Analysis of Spacecraft Radiators, *ECS Transactions,* 107 (1) 17073-17083 https://doi.org/10.1149/10701.17073ecst

Investigating thermal analysis of CPU Rectangular fin profile using different Aluminium Materials

Arin Mishra , Aman Mehrotra , S. Prabu , (2022). Study on performance analysis of a solar air heater with aerofoil shaped rib roughness using CFD, *ECS Transactions*, 107 (1) 16065-16079 https://doi.org/10.1149/10701.16065ecst

Arkadeep Mukherjee , Naman Bhargava , Parth Mathur , Kanneboina Varun , S.S. Prabu , (2022). Investigation on Performance Evaluation and Thermal and Structural Analysis of Steam Turbine Blades, *ECS Transactions*, 107 (1) 18435-18445 https://doi.org/10.1149/10701.18435ecst

Aryan Srivastava , Piyush Kumar Singh , Shivam Sinha , Tarkesh Deore , Pranav Akotkar , S. Senthur Prabu , (2023). Investigation on thermal analysis of different pin fin materials using simulation *AIP Conf. Proc. 2* 869, 040007 https://doi.org/10.1063/5.0168483

Ashwanthram Gokule Rajendran , Saubhagya Sooradas , Prakhar Chandrakar , S.S. Prabu , (2022). Investigation of Anodized Aluminium Heat Sink Using Ansys Simulation, *ECS Transactions*, 107 (1) 16459-16467 https://doi.org/10.1149/10701.16459ecst

Asokan M A , S S Prabu , Shikhar Kamesh , Wasiuddin Khan , Performance, combustion and emission characteristics of diesel engine Energy 145, 238-245, 2018 https://doi.org/10.1016/j.energy.2017.12.140

Asokan M A , Sabapathy S P , Esmail Khalife , K.A. Sanjey , S. Prathiba , (2024). Vibration analysis using wavelet transformation technique and performance characteristics of a diesel engine fueled with tamarind biodiesel-diesel blends and diverse additives, *Energy* 294, 130886 https://doi.org/10.1016/j.energy.2024.130886

Atharva Gurjar , Mohammed Moinuddin Shaikh , Siddhesh Ambilduke , Sabapathy S P , (2022). A Study on Performance Evaluation and Thermal Analysis of an Automobile Radiator, *ECS Transactions*, 107 (1) 16287-16295 https://doi.org/10.1149/10701.16287ecst

Daniel Abishai L , M.E. Surejlal , S. Sri Harish , S. Senthur Prabu , (2021). Investigation on the effect of thermal properties by change in materials of the air conditioner condenser tube using simulation, *Materials Today: Proceedings*, 45 (2) 2671-2677. https://doi.org/10.1016/j.matpr.2020.11.520

Devender, B. , P. Kishore Kumar , K. Lakshmi Kala , and Harinadh Vemanaboina . (2023). Modeling and Flow Analysis of FDM Based Dual Extruder. *Materials Today: Proceedings*, . https://doi.org/10.1016/j.matpr.2023.03.794.

Emel V. Kurian , S S Prabu , (2021). Experimental investigation of waste heat recovery from the disposal of ammonium perchlorate *Materials Today: Proceedings*, 46 (17) 8045-8050

Hardik Shukla , Sai Sravan Yarlagadda , Akshay Badagabettu , Sai Santosh Thatikonda , S.S. Prabu , (2022). Analyses of Rear Landing Gear of a UAV Using Carbon Fibre Composites, *ECS Transactions*, 107 (1) 16157-16165 https://doi.org/10.1149/10701.16157ecst

Harshita Pant , Divyanshi Shukla , Shriya Rathor , S.S. Prabu , (2021). Heat transfer analysis on different pin fin types using solid works, *Earth and Environmental Science* 850 012028. https://doi/10.1088/1755-1315/850/1/012028

Hrishikesh Rajesh Kumar , Arun Antony M T , Shyam S Warrier , Sabapathy S P , (2022). comparative study on thermal analysis of extended surface using ANSYS simulation, *ECS Transactions,* 107 (1) 12209-12219 https://doi.org/10.1149/10701.12209ecst

Kamalesh, Krishnaraj , Thamizharasan, Sivamani , S.S. Prabu , (2023). Investigation on steady state thermal analysis of disc brake using ANSYS simulation, *AIP Conf. Proc.* 2869, 040009 . https://doi.org/10.1063/5.0168485

Kartik Chaturvedi , Krishnansh Pandey , Mohammed Ahmad Siddiqui , Kunal Burarak , S. Senthur Prabu , (2023). Comparative study on thermal analysis of disc brake using ANSYS simulation, *AIP Conf. Proc.* 2869, 040015 https://doi.org/10.1063/5.0168487

Kaustubh Anand Mohta , Vaishnav Madhavadas , Dibyarup Das , Nevan Nicholas Johnson , Sabapathy S P , (2022). Comparative study on thermal properties of 3D printed and conventional fins, *ECS Transactions*, 107 (1) 14555-14574 https://doi.org/10.1149/10701.14555ecst

Keshavan, Jayendra , Dhrunil, Jeffrey , S. Senthur Prabu , (2023). Comparative study on performance of heat fins of varying design specifications, *AIP Conf. Pro*c. 2869, 040003 https://doi.org/10.1063/5.0168479

Kshitij Desai , Gaurav Lakra , Rithuvik Rajesh , S.S. Prabu , (2021). Investigation on the effect of thermal properties by changing geometry of a heat pipe using simulation, *Materials Today: Proceedings*, 46 (17) 8473-8479. https://doi.org/10.1016/j.matpr.2021.03.491

Kunal Burarak , Gaurav Mishra , Kamlesh Kumar , Sabapathy S P , (2023). Investigation on static structural and steady state thermal analysis of an engine piston using ANSYS simulation *AIP Conf. Proc.* 2869, 040013. https://doi.org/10.1063/5.0168486

Maridinapalli Sai Kiran Karthik , Havish Karanam Ramendra Karanam , Sabapathy S P , (2022) . Experimental and Thermal Analysis of Desktop FDM 3D Printers “Ender 3” and “CR-10S Pro” Hot Ends, *ECS Transactions*, 107 (1) 12851-12862 https://doi.org/10.1149/10701.12851ecst

Mohammed Rayyan Khan , Digvijay Singh Choudhary , Sabapathy S P , (2022). a study on performance evaluation of solar PV air conditioning system using simulation, *ECS Transactions*, 107 (1) 16747-16755 https://doi.org/10.1149/10701.16747ecst

Morappur Ammasi Asokan , S S Prabu , (2022). Effect of n-butanol on cotton seed oil biodiesel: an approach for improving the emission behavior of DI diesel engine, *Petroleum Science and Technology*, 41 (11), 1162–1180 https://doi.org/10.1080/10916466.2022.2092131

Mugilan M , K.S. Devendra , M. Danish , S.S. Prabu , (2022). Investigation on thermal analysis of disc brake using Autodesk Fusion 360, *Materials Today: Proceedings*, 65 (8) 3707-3713 https://doi.org/10.1016/j.matpr.2022.06.313

Neel Agarwal , Sai Sravan Yarlagadda , Sai Santosh Thatikonda and S.S. Prabu , (2022). An Investigation of Ti-6Al-4V Brake Disc Using Ansys Simulation, *ECS Transactions*, 107 (1) 8711-8719 https://doi.org/10.1149/10701.8711ecst

Nihal Chavan , Rushikesh Pote , Dishant Bhor , Sabapathy S P , (2023). Comparative thermal analysis on the extended surface of an automobile engine cylinder using ANSYS simulation, *AIP Conf. Proc.* 2869, 040006; https://doi.org/10.1063/5.0168481

Panchagnula JS , Kunduru KR , Rao KVNVN , Vemanaboina H , Gowd GH , Paramasivam P , et al. Microstructure and residual stress distribution of dissimilar joints of SS321 to Hastelloy C-276 using CO2 Laser Beam Welding: An experimental validation. AIP Advances. 2024 Dec 1;14(12). http://dx.doi.org/10.1063/5.0222415

Prabu S S , (2019). Investigating the influence of titanium on wear characteristics of P/M hot extruded alloy steels, *Materials Research Express*, 6, 106548

Prabu S S , M.A. Asokan , S. Prathiba , Shakkeel Ahmed , George Puthean , 2018. Effect of additives on performance, combustion and emission behavior in diesel engine *Renewable Energy* 122, 196-205, . https://doi.org/10.1016/j.renene.2018.01.068

Pranav Joshi , Sushovan Samantray , S. Senthur Prabu , (2022). Investigation on thermal stress analysis of brake disc using ANSYS simulation, *ECS Transactions*, 107 (1) 10865-10875 https://doi.org/10.1149/10701.10865ecst

Reddy KS , Purushotham A , Kala KL , Gupta MS , Kumar PK , Vemanaboina H. Thermal mapping of SS316L experimental and simulation for GTA welding process with moving heat source model using FEA. International Journal on Interactive Design and Manufacturing (IJIDeM). 2023;18(5):2755–63. http://dx.doi.org/10.1007/s12008-023-01310-y

Rishabh Prasad , Vidit Kohad , Hrithik Ray , Sabapathy S P , (2023), Thermal analysis of different design of fins with different materials, *AIP Conf. Proc.* 2869, 040004 https://doi.org/10.1063/5.0168477

Sabapathy S P , Asokan Morappur Ammasi , Esmail Khalife , Mohammad Kaveh , Mariusz Szymanek , Gokul Kuruvakkattu Reghu and Prathiba Sabapathy , (2021). Comprehensive Assessment from Optimum Biodiesel Yield to Combustion Characteristics of Light Duty Diesel Engine Fueled with Palm Kernel Oil Biodiesel and Fuel Additives, *Materials* (14) 4274. 1-23 https://doi.org/10.3390/ma14154274

Sabapathy S P , M.A. Asokan , Rahul Roy , Steff Francis , M.K. Sreelekh , (2017). Performance, combustion and emission characteristics of diesel engine. *Energy* 122, 638-648. http://dx.doi.org/10.1016/j.energy.2017.01.119

Sabapathy S Prabu , Asokan Morappur Ammasi , Esmail Khalife , Musthafa Babu , Saravanan Munusamy , Prathiba Sabapathy , Ayat Gharehghani , Mariusz Szymanek , Mohammad Kaveh , Optimization of Injection Timing and Ethyl Hexyl Nitrate Additive Effects on Diesel Engine Characteristics Using Rubber Seed Oil Biodiesel, *International Journal of Energy Research,* Volume 2025, Article ID 1686933, 1-14, https://doi.org/10.1155/er/1686933

Satvik Kandregula , Suhail Khan M N , Gautam Batra , C.V.S. Anirudh , Prateek Yash , S. Senthur Prabu , (2022). Comparative study on thermal and structural analysis of perimetric disc brake using ANSYS, *ECS Transactions*, 107 (1) 15721-15732 https://doi.org/10.1149/10701.15721ecst

Shashank Singh , Sultan Ahmad , Bharat Asrani , S.S. Prabu , (2023). Comparative study on thermal analysis of battery module in an electric car, *AIP Conf. Proc.* 2869, 040017 https://doi.org/10.1063/5.0168490

Shridhar S. Thakar , Sannil Nambiar , Gaurav A, Chandavarkar , Sabapathy S P , (2021). Investigation of impingement cooling on a heat sink using CFD simulation, *Materials Today: Proceedings*, 46 (17) 8753-8760. https://doi.org/10.1016/j.matpr.2021.04.066

Sumit Kalipada Sau , Kuruvilla George Pulinat , Pratik Noel Moss , Pranav Ranjeet , Sabapathy S P , (2022). A comparative study on the thermal and dynamic analysis of a disc brake using Ansys, *Materials Today: Proceedings*, 2022, 65 (8) 3714-3723 https://doi.org/10.1016/j.matpr.2022.06.318

Uppalapati, Sudhakar , Jayaprakash Sharma Panchagnula , Vishnu Vardhana Naidu B. , Harinadh Vemanaboina , Prabhu Paramasivam , and Mohamed Yusuf . (2025). Thermally Induced Residual Stresses in SS321 Welded Joints Using CO2 Laser Beam: FEA and Experimental Study. *AIP Advances* 15, no. 6 . https://doi.org/10.1063/5.0257720.

Vaishnav Madhavadas , Dibyarup Das , Kaustubh Anand Mohta , S.S. Prabu , (2021). Comparative analysis on heat transfer of various fin profile using solid works: A systematic review, *Earth and Environmental Science* 850 012029. https://doi/10.1088/1755-1315/850/1/012029

Vedant Uddhavrao Chavan , Guruvasanth A S , Amay Rana , S. Senthur Prabu , (2022). Comparative study on thermal analysis of disc brake using ANSYS simulation, *ECS Transactions*, 107 (1) 15693-15700 https://doi.org/10.1149/10701.15693ecst

Vemanaboina, Harinadh , Balram Yelamasetti , Jayaprakash Sharma Panchagnula , Naveen Kilari , Chander Prakash , Sandeep Kumar , and Husain Mehdi . (2025). Thermal and Mechanical Analysis of C-276 Alloy Using CO2 Laser Beam Welding Process. *Transactions of the Indian Institute of Metals* 78, no. 2. https://doi.org/10.1007/s12666-024-03476-9.

Vemanaboina, Harinadh , Edison Gundabattini , Kaushik Kumar , Paolo Ferro , and B Sridhar Babu . (2021). Thermal and Residual Stress Distributions in Inconel 625 ButtWelded Plates: Simulation and Experimental Validation. *Advances in Materials Science and Engineering*. https://doi.org/10.1155/2021/3948129.

Venapusa Sravan , Himani Srivastava , Pandey Dhanraj Jitendra , Sabapathy S P , (2022). Investigation on Thermal Analysis of Spacecraft Radiators, *ECS Transactions,* 107 (1), 17073-17083 https://doi.org/10.1149/10701.17073ecst

Experimental and CFD analysis on cutting tool temperature with different cooling techniques

Liljerehn, V. Kalhori , and M. Lundblad , (2009) Experimental Studies and Modeling of Heat Generation in Metal Machining *Machining Science and Technology* 13, 488–515.

Akhil C S , Ananthavishnu M H , Akhil C K , Afeez P M , Akhilesh R , Rahul Rajan , (2016) Measurement of Cutting Temperature during Machining *IOSR Journal of Mechanical and Civil Engineering* 13(2), 108–122.

Ji, X. , Zhang, X. , Li, B. , & Liang, S.Y. (2014) Modeling the Effects of Minimum Quantity Lubrication on Machining Force, Temperature, and Residual Stress *Machining Science and Technology* 18(4), 547–5640

Mia, M. , Singh, G. , Gupta, M.K. and Sharma, V.S. , (2018) Influence of Ranque-Hilsch vortex tube and nitrogen gas assisted MQL in precision turning of Al 6061-T6 *Precision Engineering* 53, 289–299.

Naumov Alexander , Vereschaka Alexey , Batako Andre , Vereschaka Anatoly , (2016) System of high-performance cutting with enhanced combined effect of cooling and lubrication medium based on RHVT *Procedia CIRP* 57, 457–460.

Liu, J. , & Chou, Y.K. (2007) Cutting Tool Temperature Analysis in Heat-Pipe Assisted Composite Machining *Journal of Manufacturing Science and Engineering-transactions of the ASME* 129, 902–910.

Bhaskara P Achar , Grynal D'Mello , Srinivasa Pai P , Gururaj K , (2019) Use of Vortex Tube Air Cooling During Machining of Inconel 718: Experimental Investigation and Modeling Studies *Journal of Mechanical Engineering Research and Developments* 42(5), 127–131.

Munish Kumar Gupta , Muhammad Jamil , Xiaojuan Wang , Qinghua Song , Zhanqiang Liu , (2019) Performance Evaluation of Vegetable Oil-Based Nano-Cutting Fluids in Environmentally Friendly Machining of Inconel-800 Alloy, *Materials*12(17), 2792

Mozammel Mia , Mahmood Al Bashir , Md Awal Khan , and Nikhil Ranjan Dhar (2017) Optimization of MQL flow rate for minimum cutting force and surface roughness in end milling of hardened steel (HRC 40) *The International Journal of Advanced Manufacturing Technology* 89, 675–690.

Manimaran, R. (2023) Review of vortex tube: a sustainable and energy separation device for multi-purpose applications *Australian Journal of Mechanical Engineering* 21(1), 27–55.

Balaji Nelge , Kiran Devade , A.T. Pise , V.M. Kale , (2014), Thermal and Metallographic Investigation for H13A and AISI1050 using Vortex Tube Jet Assisted (VTJA) Machining, *Proc. of AIMTDR-2014 Design and Research Conference –IIT(G)*, India., 42-1–42-7.

Yalçın, B. Özgür , A.E. and Koru, M , (2009), The effects of various cooling strategies on surface roughness and tool wear during soft materials milling *Materials & Design* 30, 896–899.

Onat, A. , Yüksel, S. , & Hartomacıoğlu, S. (2017) Optimization of Cutting Parameters of Turning Operation with Vortex Tube Cooling System Using Artificial Neural Network Method *Machines, Technologies, Materials* 11(9), 439–442.

Praetzas C , Teppernegg T , Mayr J , Czettl C , Schäfer J , and Abele E , (2018) Comparison of Tool Core Temperature and Active Force in Milling of Ti6Al4V under different Cooling Conditions *Procedia Manufacturing* 18, 81–88.

Sharma, A.K. , Tiwari, A.K. & Dixit A.R. , (2018) Prediction of temperature distribution over cutting tool with alumina-MWCNT hybrid nanofluid using computational fluid dynamics (CFD) analysis *The International Journal of Advanced Manufacturing Technology* 97, 427–439.

Sadi, Meisam , Farzaneh-Gord , Mahmood , (2014) Introduction of Annular Vortex Tube and experimental comparison with Ranque-Hilsch Vortex Tube *International Journal of Refrigeration* 46, 142–151.

Jiyuan Tu , Guan Heng Yeoh , Chaoqun Liu ., (2018) Computational Fluid Dynamics-A Practical Approach, 3rd ed., Elsevier Ltd, Burlington, Chapter 3–6.

John F. Wendt , (2008), Computational Fluid Dynamics: An Introduction- VKI Lecture Series, Springer Berlin, Heidelberg, ISBN: 9783540850564.

Ansys Inc , (2021), Ansys Fluent Theory Guide, ANSYS Corporation. Southpointe, USA., Chapter 1–5.

Sayma, A (2012) Computational Fluid Dynamics, Bookboon, United Kingdom, ISBN 978-87-7681-430-4.

Debnath, Sujan & Anwar, Mahmood & Pramanik, A. & Basak, A.K. (2021) Nanofluid-minimum quantity lubrication system in machining: towards clean manufacturing *Sustainable Manufacturing*, Elsevier B.V., Chapter 5, 109–135.

Vemanaboina, Harinadh , Balram Yelamasetti , Jayaprakash Sharma Panchagnula , Naveen Kilari , Chander Prakash , Sandeep Kumar , and Husain Mehdi . Thermal and Mechanical Analysis of C-276 Alloy Using CO2 Laser Beam Welding Process. *Transactions of the Indian Institute of Metals* 78, no. 2 (2025).

https://doi.org/10.1007/s12666-024-03476-9.
Reddy KS , Purushotham A , Kala KL , Gupta MS , Kumar PK , Vemanaboina H. Thermal mapping of SS316L experimental and simulation for GTA welding process with moving heat source model using FEA. *International Journal on Interactive Design and Manufacturing (IJIDeM)*. 2023;18(5):2755–63. http://dx.doi.org/10.1007/s12008-023-01310-y
Vemanaboina, Harinadh , Edison Gundabattini , Kaushik Kumar , Paolo Ferro , and B Sridhar Babu . Thermal and Residual Stress Distributions in Inconel 625 ButtWelded Plates: Simulation and Experimental Validation. *Advances in Materials Science and Engineering* 2021. https://doi.org/10.1155/2021/3948129.
Panchagnula JS , Kunduru KR , Rao KVNVN , Vemanaboina H , Gowd GH , Paramasivam P , et al. Microstructure and residual stress distribution of dissimilar joints of SS321 to Hastelloy C-276 using CO2 Laser Beam Welding: An experimental validation. *AIP Advances*. 2024 Dec 1;14(12). http://dx.doi.org/10.1063/5.0222415
Uppalapati, Sudhakar , Jayaprakash Sharma Panchagnula , Vishnu Vardhana Naidu B. , Harinadh Vemanaboina , Prabhu Paramasivam , and Mohamed Yusuf . Thermally Induced Residual Stresses in SS321 Welded Joints Using CO2 Laser Beam: FEA and Experimental Study. *AIP Advances* 15, no. 6 (2025). https://doi.org/10.1063/5.0257720.
Devender, B. , P. Kishore Kumar , K. Lakshmi Kala , and Harinadh Vemanaboina . Modeling and flow analysis of FDM based dual extruder. *Materials Today: Proceedings*, 2023. https://doi.org/10.1016/j.matpr.2023.03.794.

Thermal ANSYS analysis on CPU cylindrical fins by analysing the influence of different materials

Arin Mishra , Aman Mehrotra , S. Prabu , (2022). Study on performance analysis of a solar air heater with aerofoil shaped rib roughness using CFD, *ECS Transactions*, 107 (1) 16065–16079 https://doi.org/10.1149/10701.16065ecst
Arkadeep Mukherjee , Naman Bhargava , Parth Mathur , Kanneboina Varun , S.S. Prabu , Investigation on performance evaluation and thermal and structural analysis of steam turbine blades, *ECS Transactions*, 107 (1) (2022) 18435–18445 https://doi.org/10.1149/10701.18435ecst
Aryan Srivastava , Piyush Kumar Singh , Shivam Sinha , Tarkesh Deore , Pranav Akotkar , S. Senthur Prabu , Investigation on thermal analysis of different pin fin materials using simulation *AIP Conf. Proc.* 2869, 040007 (2023) https://doi.org/10.1063/5.0168483
Ashwanthram Gokule Rajendran , Saubhagya Sooradas , Prakhar Chandrakar , S.S. Prabu , Investigation of Anodized Aluminium Heat Sink Using Ansys Simulation, *ECS Transactions*, 107 (1) (2022) 16459–16467 https://doi.org/10.1149/10701.16459ecst
Asokan M.A. , S S Prabu , Shikhar Kamesh , Wasiuddin Khan , Performance, combustion and emission characteristics of diesel engine *Energy* 145, 238–245, 2018 https://doi.org/10.1016/j.energy.2017.12.140
Asokan M.A. , Sabapathy S P , Esmail Khalife , K.A. Sanjey , S. Prathiba , Vibration analysis using wavelet transformation technique and performance characteristics of a diesel engine fueled with tamarind biodiesel-diesel blends and diverse additives, *Energy* 294 (2024) 130886 https://doi.org/10.1016/j.energy.2024.130886
Atharva Gurjar , Mohammed Moinuddin Shaikh , Siddhesh Ambilduke , Sabapathy S P , A *Study on Performance Evaluation and Thermal Analysis of an Automobile Radia*tor, *ECS Transactions*, 107 (1) (2022) 16287–16295 https://doi.org/10.1149/10701.16287ecst
Daniel Abishai L. , M.E. Surejlal , S. Sri Harish , S. Senthur Prabu , Investigation on the effect of thermal properties by change in materials of the air conditioner condenser tube using simulation, *Materials Today: Proceedings* 2021, 45 (2) 2671–2677. https://doi.org/10.1016/j.matpr.2020.11.520
Devender, B. , P. Kishore Kumar , K. Lakshmi Kala , and Harinadh Vemanaboina . Modeling and Flow Analysis of FDM Based Dual Extruder. *Materials Today: Proceedings*, (2023). https://doi.org/10.1016/j.matpr.2023.03.794.
Hardik Shukla , Sai Sravan Yarlagadda , Akshay Badagabettu , Sai Santosh Thatikonda , S.S. Prabu , analyses of rear landing gear of a UAV using carbon fibre composites, *ECS Transactions*, 107 (1) (2022) 16157–16165 https://doi.org/10.1149/10701.16157ecst
Harshita Pant , Divyanshi Shukla , Shriya Rathor , S.S. Prabu , Heat transfer analysis on different pin fin types using solid works, *Earth and Environmental Science* 850 (2021) 012028. https://doi/10.1088/1755-1315/850/1/012028
Hrishikesh Rajesh Kumar , Arun Antony M T , Shyam S Warrier , Sabapathy S P , Comparative study on thermal analysis of extended surface using ANSYS simulation, *ECS Transactions*, 107 (1) (2022) 12209–12219 https://doi.org/10.1149/10701.12209ecst

Kamalesh, Krishnaraj , Thamizharasan, Sivamani , S.S. Prabu , Investigation on steady state thermal analysis of disc brake using ANSYS simulation, *AIP Conf. Proc*. 2869, 040009 (2023) https://doi.org/10.1063/5.0168485

Kartik Chaturvedi , Krishnansh Pandey , Mohammed Ahmad Siddiqui , Kunal Burarak , S. Senthur Prabu , (2023) . Comparative study on thermal analysis of disc brake using ANSYS simulation, *AIP Conf. Proc.* 2869, 040015 https://doi.org/10.1063/5.0168487

Kaustubh Anand Mohta , Vaishnav Madhavadas , Dibyarup Das , Nevan Nicholas Johnson , Sabapathy S P , Comparative Study on Thermal Properties of 3D Printed and Conventional Fins, *ECS Transactions,* 107 (1) (2022) 14555–14574 https://doi.org/10.1149/10701.14555ecst

Keshavan, Jayendra , Dhrunil, Jeffrey , S. Senthur Prabu , Comparative study on performance of heat fins of varying design specifications, *AIP Conf. Proc.* 2869, 040003 (2023) https://doi.org/10.1063/5.0168479

Kshitij Desai , Gaurav Lakra , Rithuvik Rajesh , S.S. Prabu , Investigation on the effect of thermal properties by changing geometry of a heat pipe using simulation, *Materials Today: Proceedings* 2021, 46 (17) 8473–8479. https://doi.org/10.1016/j.matpr.2021.03.491

Kumar R , Bairwa KN , Vemanaboina H , Naidu BV , Shoush KA , Pushkarna M , et al. Enhancing wear resistance of aluminum 6061 composites with fly ash: A sustainable approach for industrial applications. *Advances in Mechanical Engineering*. 2024; 16(10). http://dx.doi.org/10.1177/16878132241290913

Kunal Burarak , Gaurav Mishra , Kamlesh Kumar , Sabapathy S P , Investigation on static structural and steady state thermal analysis of an engine piston using ANSYS simulation *AIP Conf. Proc*. 2869, 040013 (2023) https://doi.org/10.1063/5.0168486

Maridinapalli Sai Kiran Karthik , Havish Karanam Ramendra Karanam , Sabapathy S P , Experimental and Thermal Analysis of Desktop FDM 3D Printers “Ender 3” and “CR-10S Pro” Hot Ends”, *ECS Transactions*, 107 (1) (2022) 12851–12862 https://doi.org/10.1149/10701.12851ecst

Mohammed Rayyan Khan , Digvijay Singh Choudhary , Sabapathy S P , A Study on Performance Evaluation of Solar PV Air Conditioning System Using Simulation, *ECS Transactions*, 107 (1) (2022) 16747–16755 https://doi.org/10.1149/10701.16747ecst

Morappur Ammasi Asokan , S S Prabu , Effect of n-butanol on cotton seed oil biodiesel: an approach for improving the emission behavior of DI diesel engine, *Petroleum Science and Technology*, (2022) 41 (11), 1162–1180 https://doi.org/10.1080/10916466.2022.2092131

Mugilan M. , K.S. Devendra , M. Danish , S.S. Prabu , Investigation on thermal analysis of disc brake using Autodesk Fusion 360, *Materials Today: Proceedings* (2022), 65 (8) 3707–3713 https://doi.org/10.1016/j.matpr.2022.06.313

Neel Agarwal , Sai Sravan Yarlagadda , Sai Santosh Thatikonda and S.S. Prabu , An Investigation of Ti-6Al-4V Brake Disc Using Ansys Simulation, *ECS Transactions*, 107 (1) (2022) 8711–8719 https://doi.org/10.1149/10701.8711ecst

Nihal Chavan , Rushikesh Pote , Dishant Bhor , Sabapathy S P , Comparative thermal analysis on the extended surface of an automobile engine cylinder using ANSYS simulation, AIP Conf. Proc. 2869, 040006 (2023) https://doi.org/10.1063/5.0168481

Panchagnula JS , Kunduru KR , Rao KVNVN , Vemanaboina H , Gowd GH , Paramasivam P , et al. Microstructure and residual stress distribution of dissimilar joints of SS321 to Hastelloy C-276 using CO2 Laser Beam Welding: An experimental validation. *AIP Advances*. 2024 Dec 1;14(12). http://dx.doi.org/10.1063/5.0222415

Prabu S.S. , Investigating the influence of titanium on wear characteristics of P/M hot extruded alloy steels, *Materials Research Express* 2019, 6, 106548

Prabu S.S. , M.A. Asokan , S. Prathiba , Shakkeel Ahmed , George Puthean , Effect of additives on performance, combustion and emission behavior in diesel engine *Renewable Energy* 122, 196–205, 2018. https://doi.org/10.1016/j.renene.2018.01.068

Pranav Joshi , Sushovan Samantray , S. Senthur Prabu , Investigation on Thermal Stress Analysis of Brake Disc Using ANSYS Simulation, *ECS Transactions*, 107 (1) (2022) 10865–10875 https://doi.org/10.1149/10701.10865ecst

Reddy KS , Purushotham A , Kala KL , Gupta MS , Kumar PK , Vemanaboina H. Thermal mapping of SS316L experimental and simulation for GTA welding process with moving heat source model using FEA. International *Journal on Interactive Design and Manufacturing (IJIDeM)*. 2023;18(5):2755–63. http://dx.doi.org/10.1007/s12008-023-01310-y

Rishabh Prasad , Vidit Kohad , Hrithik Ray , Sabapathy S P , Thermal analysis of different design of fins with different materials, *AIP Conf. Proc.* 2869, 040004 (2023) https://doi.org/10.1063/5.0168477

Sabapathy S P , Asokan Morappur Ammasi , Esmail Khalife , Mohammad Kaveh , Mariusz Szymanek , Gokul Kuruvakkattu Reghu and Prathiba Sabapathy , Comprehensive Assessment from Optimum Biodiesel Yield to Combustion Characteristics of Light Duty Diesel Engine Fueled with Palm Kernel Oil Biodiesel and Fuel Additives, *Materials* 2021 (14) 4274. 1–23 https://doi.org/10.3390/ma14154274

Sabapathy S P , M.A. Asokan , Rahul Roy , Steff Francis , M.K. Sreelekh , Performance, combustion and emission characteristics of diesel engine *Energy* 122, 638–648, 2017

http://dx.doi.org/10.1016/j.energy.2017.01.119
Satvik Kandregula , Suhail Khan M N , Gautam Batra , C.V.S. Anirudh , Prateek Yash , S. Senthur Prabu , Comparative Study on Thermal and Structural Analysis of Perimetric Disc Brake Using ANSYS, *ECS Transactions*, 107 (1) (2022) 15721–15732 https://doi.org/10.1149/10701.15721ecst
Shashank Singh , Sultan Ahmad , Bharat Asrani , S.S. Prabu , Comparative study on thermal analysis of battery module in an electric car, *AIP Conf. Proc.* 2869, 040017 (2023) https://doi.org/10.1063/5.0168490
Shridhar S. Thakar , Sannil Nambiar , Gaurav A, Chandavarkar , Sabapathy S P , Investigation of impingement cooling on a heat sink using CFD simulation, *Materials Today: Proceedings* 2021, 46 (17) 8753–8760. https://doi.org/10.1016/j.matpr.2021.04.066
Uppalapati, Sudhakar , Jayaprakash Sharma Panchagnula , Vishnu Vardhana Naidu B. , Harinadh Vemanaboina , Prabhu Paramasivam , and Mohamed Yusuf . Thermally Induced Residual Stresses in SS321 Welded Joints Using CO2 Laser Beam: FEA and Experimental Study. *AIP Advances* 15, no. 6 (2025). https://doi.org/10.1063/5.0257720.
Vedant Uddhavrao Chavan , Guruvasanth A S , Amay Rana , S. Senthur Prabu , Comparative Study on Thermal Analysis of Disc Brake Using ANSYS Simulation, *ECS Transactions,* 107 (1) (2022) 15693–15700 https://doi.org/10.1149/10701.15693ecst
Vemanaboina, Harinadh , Balram Yelamasetti , Jayaprakash Sharma Panchagnula , Naveen Kilari , Chander Prakash , Sandeep Kumar , and Husain Mehdi . Thermal and Mechanical Analysis of C-276 Alloy Using CO2 Laser Beam Welding Process. *Transactions of the Indian Institute of Metals* 78, no. 2 (January 11, 2025). https://doi.org/10.1007/s12666-024-03476-9.
Vemanaboina, Harinadh , Balram Yelamasetti , Jayaprakash Sharma Panchagnula , Naveen Kilari , Chander Prakash , Sandeep Kumar , and Husain Mehdi . Thermal and Mechanical Analysis of C-276 Alloy Using CO2 Laser Beam Welding Process. *Transactions of the Indian Institute of Metals* 78, no. 2 (2025). https://doi.org/10.1007/s12666-024-03476-9.
Vemanaboina, Harinadh , Edison Gundabattini , Kaushik Kumar , Paolo Ferro , and B Sridhar Babu . Thermal and Residual Stress Distributions in Inconel 625 ButtWelded Plates: Simulation and Experimental Validation., *Advances in Materials Science and Engineering* 2021, no. 1 (January 2021). https://doi.org/10.1155/2021/3948129.
Vemanaboina, Harinadh , Edison Gundabattini , Kaushik Kumar , Paolo Ferro , and B Sridhar Babu . Thermal and Residual Stress Distributions in Inconel 625 ButtWelded Plates: Simulation and Experimental Validation. *Advances in Materials Science and Engineering* 2021. https://doi.org/10.1155/2021/3948129.
Vemanaboina, Harinadh , Krishnamohan Reddy Kunduru , Panchagnula Kishore Kumar , R Raman Goud , and G Harinath Gowd . Mechanical Properties of CO2 Laser Beam Butt-Welded Plates of Hastelloy c-276. Proceedings of the Institution of Mechanical Engineers, *Part E: Journal of Process Mechanical Engineering*, April 1, 2024. https://doi.org/10.1177/09544089241239620.
Venapusa Sravan , Himani Srivastava , Pandey Dhanraj Jitendra , Sabapathy S P , Investigation on Thermal Analysis of Spacecraft Radiators, *ECS Transactions*, 107 (1) (2022) 17073–17083 https://doi.org/10.1149/10701.17073ecst

Comparative study and analysis of vortex tube on composite material: Cu-Sic-Fly Ash

Priyaranjan Samal (2023). Effect of SiC and WC reinforcements on microstructural and mechanical characteristics of copper alloy-based metal matrix composites using stir casting route, Applied Sciences.
James Cartlidge (2022). Performance characteristics of a divergent vortex tube Elsevier.
Ahamad M. Alsaghir (2022). Numerical and sensitivity analyses of various design parameters to maximize performance of vortex tube, *Elsevier*.
P. Kumar , A. Mahamani (2022). Mechanical properties of wire arc additive manufacturing ER4043-AIN composites, IJME.
Sagar Manmath Swami (2022). Design and development of a cooling system for a vaccine container by using vortex tube refrigeration, IJERT
Sandeep Lutade (2022). Experimental analysis of vortex tube refrigeration with different tube diameters and at variousinlet pressures, IRJETS.
Bo Zhang (2021). An optimization method on managing ranque hilsch vortex tube with synergy between flow structure and performance, Elsevier.
Serhat Sap (2021). Investigation of microstructure and mechanical properties of Cu/Ti-B-SiC hybrid composites, Elsevier.
G. Sankaraiah (2019). Experimental and comparative study on material effect of vortex tube on the cold outlet air temperature. *AIP publishing*

Nosewicz S. (2019). Experimental and numerical studies of micro and micromechanical properties of modified copper silicon carbide composites, Elsevier.
Prabakaran.J and Andvaidyanathan.S (2010). Effect of diameter of Orifice and Nozzle on the performance of counter flow vortex tube, IJEST Journal.
Maziar Arjomandi . An Investigation of the Effect of the Hot End Plugs on the Efficiency of the Ranque-Hilsch Vortex Tube
Prabakaran J. and Vaidyanathan S. (2010). Effect of Orifice and Pressure of Counter Flow Vortex Tube IJST,
Singh PK , RG Tathgir , Gangacharyulu, G S Grewal . An Experimental Performance Evaluation of Vortex Tube Chengming Gao. Experimental Study on the Ranque-Hilsch Vortex Tube. PhD Thesis.
Nellis G.F. and Klein S.A. , Application of Vortex Tubes to Refrigeration Cycles
Giorgio De Vera. The Ranque-Hilsch Vortex Tube
Volkan Kırmacı , (2009). Energy analysis and performance of a counter flow Ranque-Hilsch vortex tube having various nozzle numbers at different inlet pressures of oxygen and air, Elsevier Journal.
Fikret Kocabas , (2010). Modeling of heating and cooling performance of counter flow type vortex tube by using artificial neural network, Elsevier Journal.
Dincer K. , (2010). Experimental investigation and exergy analysis of the performance of a counter flow Ranque-Hilsch vortex tube with regard to nozzle cross-section areas, Elsevier Journal.
Kumar, Raj , Kedar Narayan Bairwa , Harinadh Vemanaboina , BoyaVishnu Vardhana Naidu , Kamel A Shoush , Mukesh Pushkarna , Milkias Berhanu Tuka , and Sherif SM Ghoneim . (2024). Enhancing wear resistance of Aluminum 6061 composites with Fly Ash: A sustainable approach for industrial applications. Advances in Mechanical Engineering 16, no. 10 . https://doi.org/10.1177/16878132241290913.
Vemanaboina H , Ananda KE , Majid MSA , Naidu BVV , Pugazhenthi R. (2023). Influence of pre-heating technique on the titanium alloy for machinability using mill insert. AIP Conference Proceedings. http://dx.doi.org/10.1063/5.0168234
Ramesh G , Sudarsanam M , Mahamani A , Babu KD , Shajiya SA (2023). Evaluation of mechanical properties of recycled AA6061-copper composite metallic materials. AIP Conference Proceedings. http://dx.doi.org/10.1063/5.0168312
Ramesh G , Rao KVNVN , Reddivaraprasad K , Rupesh A. (2023). Design and performance evaluation of a vortex tube form by gun metal. AIP Conference Proceedings. http://dx.doi.org/10.1063/5.0168311
Ramesh, G. , Killari, N. , Reddy, G.S. and Sudarsanam, M. , (2024). Design and performance evaluation of a vortex tube form by brass material. In AIP Conference Proceedings (Vol. 2937, No. 1, p. 020006). AIP Publishing LLC.
Kumar, R. , Bairwa, K.N. , Vemanaboina, H. , Naidu, B.V. , Shoush, K.A. , Pushkarna, M. , Tuka, M.B. and Ghoneim, S.S. , (2024). Enhancing wear resistance of aluminum 6061 composites with fly ash: A sustainable approach for industrial applications. Advances in Mechanical Engineering, 16(10), p.16878132241290913.
Venkatrao, S , B Vinod , P Baburao , R Ravindraiah , Harinadh Vemanaboina , and Prabhu Paramasivam . (2024). Assessment of Mechanical and Tribological Behavior of Mg-4Zn-1RE-0.7Zr Alloy: Novel Mixture of Si3N4/TiC/MoS2 Utilizing Casting Technique. Composites and Advanced Materials 33 . https://doi.org/10.1177/26349833241279311.
Konduru J , Kumar GR , Reddy GV , Ahilan C , Rajesh R , Vemanaboina H , Goud RR (2023). An experimental investigation and comparison of mechanical properties of Al7075-SiC-Al2O3-Zro2 composites of automotive applications. In AIP Conference Proceedings (Vol. 2869, No. 1, p. 020008). AIP Publishing LLC.
Vemanaboina H , Venugopal C , Kotthinti NK (2021). Thermal and mechanical analysis of multipass SS316L using GTAW process. Materials Today: Proceedings. 46:562–566.
Vemanaboina H , Kotthinti NK , Chittemsetty V. (2021). Multipass dissimilar joints for SS316L to Inconel625 using gas tungsten arc welding. Materials Today: Proceedings. 46:567–571.
Reddy KS , Vemanaboina H , Naidu BV , Yelamasetti B , Bridjesh P , Shelare SD . (2023). Minimizing distortion in multi-pass GTAW welding of SS316L structures: a Taguchi approach. International Journal on Interactive Design and Manufacturing (IJIDeM). 1–8.

Parametric analysis & empirical modeling of laser beam welding of titanium alloys

Deshmukh, S.V. , Pawar, M.S. , and Patil, R.R. (2020). Experimental investigation on laser beam welding of titanium alloy Ti-6Al-4V. Materials Today: Proceedings, 26, 2376–2381.
Gupta, P. , and Yadav, R.K. (2021). Recent developments in laser welding of titanium alloys in aerospace applications. Materials Today: Proceedings, 46, 6837–6841. https://doi.org/10.1016/j.matpr.2021.01.194

Kumar, A. , Sharma, A. , and Singh, S. (2022). Optimisation and prediction of laser welding process parameters for titanium alloys using response surface methodology. Journal of Manufacturing Processes, 78, 423–432.

Patel, K. , Vyas, V. , and Mehta, D. (2021). Laser beam welding in electric vehicle battery manufacturing: Challenges and future trends. Int. Jour. Adv. Tech. 114, 3453–3468.

Verma, P. , Sharma, A. , and Thakur, A. (2023). Advances in laser beam welding for automotive manufacturing: Integration, challenges, and outlook. Journal of Manufacturing Processes, 85, 977–987.

Yaduwanshi, M. , and Tripathi, A. (2023). Influence of process parameters in laser welding of titanium alloys: A critical review. Materials Today: Proceedings, 80, 1541–1548.

Kim, H.J. , Lee, S.H. , and Park, J.W. (2020). Comparison of disk laser and Nd: YAG laser welding for titanium alloys. Journal of Laser Applications, 32(3), 032001.

Li, Y. , Chen, X. , and Zhang, J. (2023). Advances in disk laser welding technology for aerospace manufacturing. Optics and Laser Technology, 157, 108692.

Patel, M. , and Shah, R. (2022). Application of disk laser welding in automotive manufacturing: Process efficiency and weld quality. Materials Today: Proceedings, 49, 1741–1746. https://doi.org/10.1016/j.matpr.2021.06.085

Singh, R. , Verma, S. , and Kumar, P. (2023). Optimisation of laser disk welding parameters for improved weld strength in titanium alloys. International Journal of Advanced Manufacturing Technology, 124, 367–375.

Alhajhamoud, M. , et al . (2022). Laser welding of Ti6Al4V titanium alloy in air and a water medium. Materials, 15(24), 9088. https://doi.org/10.3390/ma15249088

Wu, L. , Liu, R. , Wang, L. , Zhan, X. , and Wang, Z. (2025). Microstructural evolution and mechanical behaviour of laser welding Ti6Al4V fabricated by laser powder bed fusion and direct energy deposition. Science and Technology of Welding and Joining.

Yelamasetti, Balram , Jayaprakash Sharma Panchagnula, Ankammarao Padamurthy , Harinadh Vemanaboina, Chander Prakash , and Prabhu Paramasivam . (2024). Microstructure and Mechanical Analysis of SS321 in CO2 Laser Beam Welding Joint. The International Journal of Advanced Manufacturing Technology 135, no. 11–12: 5861–5874. https://doi.org/10.1007/s00170-024-14850-8.

Vemanaboina, Harinadh , A. Purushotham , K. Srinivasulu Reddy , P. Nithish Reddy , Chander Prakash , Rahul Kumar , and Husain Mehdi . (2024). Optimization of process parameters of CO2 Laser Beam Butt Joints of SS321. International Journal on Interactive Design and Manufacturing (IJIDeM) 19, no. 7 (2024): 4919–4931. https://doi.org/10.1007/s12008-024-02095-4.

Vemanaboina, Harinadh , Krishnamohan Reddy Kunduru , Panchagnula Kishore Kumar , R Raman Goud , and G Harinath Gowd . (2024). Mechanical Properties of CO2 Laser Beam Butt-Welded Plates of Hastelloy c-276. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering. https://doi.org/10.1177/09544089241239620.

Vemanaboina, Harinadh , Chittemsetty Venugopal , and Nagendra Kumar Kotthinti . Thermal and Mechanical Analysis of Multipass SS316L Using GTAW Process. Materials Today: Proceedings 46 (2021): 562–566. https://doi.org/10.1016/j.matpr.2020.11.284.

Reddy KS , Purushotham A , Kala KL , Gupta MS , Kumar PK , Vemanaboina H. (2023). Thermal mapping of SS316L experimental and simulation for GTA welding process with moving heat source model using FEA. International Journal on Interactive Design and Manufacturing (IJIDeM);18(5):2755–2763. http://dx.doi.org/10.1007/s12008-023-01310-y

Vemanaboina, Harinadh , Edison Gundabattini , Kaushik Kumar , Paolo Ferro , and B Sridhar Babu . (2021). Thermal and residual stress distributions in Inconel 625 ButtWelded plates: Simulation and experimental validation. Advances in Materials Science and Engineering. https://doi.org/10.1155/2021/3948129.

Panchagnula JS , Kunduru KR , Rao KVNVN , Vemanaboina H , Gowd GH , Paramasivam P , *et al.* (2024). Microstructure and residual stress distribution of dissimilar joints of SS321 to Hastelloy C-276 using CO2 Laser Beam Welding: An experimental validation. AIP Advances.;14(12). http://dx.doi.org/10.1063/5.0222415

Uppalapati, Sudhakar , Jayaprakash Sharma Panchagnula , Vishnu Vardhana Naidu B. , Harinadh Vemanaboina , Prabhu Paramasivam , and Mohamed Yusuf . (2025). Thermally Induced Residual Stresses in SS321 Welded Joints Using CO2 Laser Beam: FEA and Experimental Study. AIP Advances 15, no. 6. https://doi.org/10.1063/5.0257720.

Static analysis and integration of IoT on safety helmet

Afshari, A. and S.M. Rajaai, S.M. (2008). Finite element simulations investigating the role of the helmet in reducing head injuries, International Journal of Simulation Modeling, Vol.7, No. 1, pp. 42–51.

Alam, F. Subic, A. and Akbarzadeh, A. (2008). Aerodynamics of Bicycle Helmets", The Engineering of Sport, Vol.7, No.1, pp. 334–337.

Bachynski, K.E. and Goldberg, D.S. (2014). Youth sports and public health: framing risks of mild traumatic brain injury in American football and ice hockey, Journal of Law, Medicine & Ethics, Vol. 42, pp. 323–333.

Blair, K. and Sidelko, S. (2008). Aerodynamic Performance of Cycling Time Trial Helmets, The Engineering of Sport, Vol.7, No. 2, pp. 371–377.

Marjolein J. Boele-Vos , and Saskia de Craen , (2015). A randomized controlled evaluation study of the effects of a one-day advanced rider training course, Accident Analysis & Prevention, Vol. 79, pp. 152–159.

Chang, L.Y. (2005). Empirical analysis of the effectiveness of mandated motorcycle helmet use in Taiwan, Journal of the Eastern Asia Society for Transportation Studies, Vol. 6, pp. 3629–3644.

Nitin Agarwal , Anshul Kumar Singh , Pushpendra Pratap Singh , and Rajesh Sahani , (2005). Smart Helmet, International Research Journal of Engineering and Technology, Vol. 2, No. 2.

Sudharsana Vijayan, Vineed T Govind, Merin Mathews, Simna Surendran , MuhammedSabah, M.E. (2014). Alcohol detection using smart helmet system, International Journal of Emerging Technology in Computer Science & Electronics (IJETCSE), Volume 8 Issue 1.

Jennifer William, Kaustubh Padwal , Nexon Samuel, Akshay Bawkar , and SmitaRukhande , (2016). Intelligent Helmet, International Journal of Scientific & Engineering Research, Volume 7, Issue 3.

Chitte, P.P. Salunke Akshay, S. Thorat Aniruddha, N. Bhosale Nilesh,T. (2016). Smart Helmet & Intelligent Bike System, International Research Journal of Engineering and Technology (IRJET), Volume 03: Issue: 05.

CFD analysis and IoT integration on effect of the temperature distribution on cold storage system

Maidment Prosser, G.G. (1998). Refrigerated investigation into the viability of CHP in cold storage facilities. *International Institute of Refrigeration Conference*, Transport, Storage and Display Conference Cambridge.

Hoang M.L. , Pvervoven, j and Baerdemaeker, D.E. Nicolai B.M. (2000). Analysis of the air flow in a cold store by means of CFD. International Journal of Refrigeration vol.23, pp. 127–140.

Chourasia, M.K. and Goswami, T.K. (2007). CFD simulation of effects of operating parameters and product on heat transfer and moisture loss in the stack of bagged potatoes. Journal of Food Engineering vol.80, pp. 947–960.

Chourasia, M.K. and Goswami, T.K. (2007). Simulation of effect of stack dimensions and stacking arrangement on cool down characteristics of potato in a cold store by computational fluid dynamics. Bios stems Engineering vol. 96, No.4, pp. 503–515.

Stritih, U and Butala, V. (2007). Energy saving in building with PCM cold storage. International Journal of Energy Research vol. 31, No.15, pp. 1532–1544.

Son Ho, H. and Muhammad Rahaman, M. (2010). Numerical simulation of temperature and velocity in refrigerated cold storage. International Journal of Refrigeration vol.33, pp.1015–1025.

Syed Majid Sajadiye , Hojjat Ahmadi , Maryam Zolfaghari , Seyed Saeid Mohtasebi , Younes Mostofi , and Amir Raja . (2013). A Multi-Scale Three-Dimensional CFD Model of a Full Loaded Cool Storage. International Journal of Food Engineering vol. 9, no. 2, pp. 163–178.

Rai, H.M. , Shukla, K.K. , Tightiz, L and Padmanaban S. (2024). Enhancing data security and privacy in energy applications: Integrating IoT and blockchain technologies Heliyon, 10(19).

Liu Z , Li M , and Ji W. (2025). Development and application of a digital twin model for Net zero energy building operation and maintenance utilizing BIM-IoT integration. Energy and Buildings 328:115170.

Nguyen T , Nguyen H , and Gia T.N. (2024). Exploring the integration of edge computing and blockchain IoT: Principles, architectures, security, and applications. Journal of Network and Computer Applications 103884.

K.M.V.V. Prasad , H.N. Suresh Dr. , and R. Aluvalu , (2018). An efficient parametric model-based framework for recursive frequency/spectrum estimation of nonstationary signal , International Journal of Engineering and Technology, vol. 7, no. 4.6, p. 26doi: 10.14419/ijet.v7i4.6.20227

D.S.S. Satyanarayana and K.M.V.V. Prasad , (2019). Multilayered Antenna Design for Smart City Applications, 2nd Smart Cities Symposium (SCS 2019), pp. 56 (7 pp.)-56 (7 pp.), doi:10.1049/cp.2019.0229.

R. Dhull , D. Chava , D.V. Kumar , K.M. Prasad , G. Samudrala , and M.V. Bhargav , (2020). Pandemic Stabilizer using Smartwatch, 2020 International Conference on Decision Aid Sciences and Application (DASA), pp. 860–866, doi: 10.1109/dasa51403.2020.9317056.

M.V.V.P. Kantipudi , S. Rani , and S. Kumar , (2021). IoT based solar monitoring system for smart city: an investigational study, IET Conference Proceedings, vol. 2021, no. 11, pp. 25–30, doi: 10.1049/icp.2022.0307.
M.P. Kantipudi and S. Velamuri , (2021). Internet of things – based smart campus – a review, IET Conference Proceedings, vol. 2021, no. 11, pp. 490–495, doi: 10.1049/icp.2022.0392.
M.V.V.P. Kantipudi , C.J. Moses , R. Aluvalu , and S. Kumar , (2021). Remote patient monitoring using IoT, cloud computing and AI, Hybrid Artificial Intelligence and IoT in Healthcare, pp. 51–74, doi: 10.1007/978-981-16-2972-3_3.
M.P. Kantipudi , R. Aluvalu , and S. Velamuri , (2022). An intelligent approach of intrusion detection in mobile crowd sourcing systems in the context of IoT based SMART city, Smart Science, vol. 11, no. 1, pp. 234–240, doi: 10.1080/23080477.2022.2117889.
S. Mukhopadhyay , A. Kumar , J. Gupta , A. Bhatnagar , M.P. Kantipudi , and M. Singh , (2024). A Review and analysis of iot enabled smart transportation using machine learning techniques, International Journal of Transport Development and Integration, vol. 8, no. 1, pp. 61–77, doi: 10.18280/ijtdi.080106.
P. K. N.S, M.P. Kantipudi , P. N, S.S., R. Aluvalu , and J. Jagtap , (2024). A Security Analysis Model for IoT-ecosystem Using Machine Learning-(ML) Approach, Recent Advances in Computer Science and Communications, vol. 17, no. 6, doi: 10.2174/0126662558286885240223093414.

Review for Polycystic Ovary Syndrome (PCOS) detection based on different techniques

Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports, vol. 15, p. 17311, 2025. doi:10.1038/s41598-025-01823-4.
Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204.
Anand, Nemalikanti , Sudhakar Uppalapati, Ankammarao Padamurthy , Panchagnula Kishore Kumar, G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy, 1–37. https://doi.org/10.1115/1.4069225.
Batra, H. , and Nelson, L. (2023). DCADS: Data-Driven Computer Aided Diagnostic System using Machine Learning Techniques for Polycystic Ovary Syndrome. International Journal of Performability Engineering, 19(3), 193.
Buchade A.C. and Kantipudi M.P. (2024). Recent Trends on Brain Tumor Detection Using Hybrid Deep Learning Methods, Revue d'Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, (2024), doi:10.18280/ria.380111.
Chavan, N. , Karkera, S. , Birambole, A. , Chavan, I. , and Samanta, R. (2023). Comparative Study of Machine Learning Algorithms for Prediction of Polycystic Ovary Syndrome. In *2023 9th International Conference on Advanced Computing and Communication Systems (ICACCS)* (Vol. 1, pp. 1710–1714). IEEE.
Chitra, P. , Srilatha, K. , Sumathi, M. , Jayasudha, F.V. , Bernatin, T. , and Jagadeesh, M. (2023). Classification of ultrasound pcos image using deep learning based hybrid models. In *2023 Second International Conference on Electronics and Renewable Systems (ICEARS)* (pp. 1389–1394). IEEE.
Chitra, P. , Sumathi, M. , Srilatha, K. , Jayasudha, F.V. , and Amudha, S. (2022). Review of Artificial Intelligent based Algorithm for Prediction of Polycystic Ovary Syndrome (PCOS) from Blood Samples. In *2022 4th International Conference on Inventive Research in Computing Applications (ICIRCA)* (pp. 1172–1176). IEEE.
Dhinakaran, S. , Thangavel, C. , Shivayavashilaxmipriya, S. , and Harinee, V.S. (2022). PCOS Perception analysis prediction using Machine learning algorithms. In *2022 IEEE 7th International Conference on Recent Advances and Innovations in Engineering (ICRAIE)* (Vol. 7, pp. 260–265). IEEE.
Gopalakrishnan, C. , and Iyapparaja, M. (2021). Multilevel thresholding-based follicle detection and classification of polycystic ovary syndrome from the ultrasound images using machine learning. International Journal of System Assurance Engineering and Management, 1–8.
Gupta, A. , and Fatima, H. (2023). A Systematic Review of Machine Learning for Ovarian Cyst Detection using Ultrasound Images. In *2023 2nd International Conference on Applied Artificial Intelligence and Computing (ICAAIC)* (pp. 201–206). IEEE.

Hosain, A.S. , Mehedi, M.H.K. , and Kabir, I.E. (2022). Pconet: A convolutional neural network architecture to detect polycystic ovary syndrome (pcos) from ovarian ultrasound images. In 2022 International Conference on Engineering and Emerging Technologies (ICEET) (pp. 1–6). IEEE.

Jain, Ayushi , Vaibhav Saini, Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing autonomous vehicle intelligence with cutting-edge spatial crowdsourcing framework." In International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media, pp. 120–133. Cham: Springer Nature Switzerland, 2023.

Jan, N. , Makhdoomi, A. , Handa, P. , and Goel, N . (2022). Machine learning approaches in medical image analysis of PCOS. In 2022 International Conference on Machine Learning, Computer Systems and Security (MLCSS) (pp. 48–52). IEEE.

Kantipudi M.P. , Kumar S. , and Jha A.K. (2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, doi:10.1155/2021/2676780.

Karia, A. , Poojary, A. , Tiwari, A. , Sequeira, L. , and Sokhi, M.K. (2023). Beredy (period tracker and pcos diagnosis). In *2023 International Conference on Communication System, Computing and IT Applications (CSCITA)* (pp. 142–147). IEEE.

Kaur, N. , Gupta, G. , and Kaur, P. (2023). Transfer-Based Deep Learning Technique for PCOS Detection Using Ultrasound Images. In *2023 International Conference on Network, Multimedia and Information Technology (NMITCON)* (pp. 1–6). IEEE.

Mahajan, K. , and Mane, P. (2023). Follicle Detection of Polycystic Ovarian Syndrome (Pcos) Using Yolo. In *2023 9th International Conference on Advanced Computing and Communication Systems (ICACCS)* (Vol. 1, pp. 1550–1553). IEEE.

Makhdoomi, A. , Jan, N. , Palak, P. , and Goel, N. (2022). Machine learning techniques for medical images in pcos. In *2022 4th International Conference on Artificial Intelligence and Speech* Technology (AIST) (pp. 1–6). IEEE.

Modi, N. , and Kumar, Y. (2024). Detection and Classification of Polycystic Ovary Syndrome using Machine Learning-Based Approaches. In *2024 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)* (Vol. 2, pp. 1–6). IEEE.

Prajna, K.B. , Iyer, B.V. , Bhuvan, C. , Thambanda, K.M. , and Kanasu, H.R. (2023). Implementation of Various Machine Learning Algorithms to Predict Polycystic Ovary Syndrome. In *2023 4th International Conference for Emerging Technology (INCET)* (pp. 1–6). IEEE.

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). Enhancing health product traceability on the Blockchain: A novel approach for supply chain management inspection to AI, EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, doi: 10.4108/eetpht.10.5544.

Rachana, B. , Priyanka, T. , Sahana, K.N. , Supritha, T.R. , Parameshachari, B.D. , and Sunitha, R. (2021). Detection of polycystic ovarian syndrome using follicle recognition technique. Global Transitions Proceedings, 2(2), 304–308.

Saini V. , Jain A. , Anurag , and Kantipudi M.V.V.P. (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in *Proc. 15th Int. Conf. Soft Comput. Pattern Recognit.* (SoCPaR 2023), A. Bajaj , A. Abraham , K.R. Madhavi , and O. Castillo , Eds., vol. 1247, *Lecture Notes in Networks and Systems*, Cham: Springer. doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and Kantipudi M.V.V. (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13.

Shahid, R. , Mahnoor , Awan, K.A. , Iqbal, M.J. , Munir, H. , and Saeed, I. (2022). Diet and lifestyle modifications for effective management of polycystic ovarian syndrome (PCOS). Journal of Food Biochemistry, 46(7), e14117.

Srinithi, V. , and Rekha, R. (2023). Machine learning for diagnosis of polycystic ovarian syndrome (PCOS/PCOD). In *2023 International Conference on Intelligent Systems for Communication, IoT and Security (ICISCoIS)* (pp. 19–24). IEEE.

Sudhakar Yadav N. , U. Maheswari V., Aluvalu R. , Sai Prashanth M. , Saini V. , and Prasad Kantipudi M.V.V. (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 1–10.

Tiwari, S. , and Maheshwari, P. (2023). PCOS-WaveConvNet: A Wavelet Convolutional Neural Network for Polycystic Ovary Syndrome Detection using Ultrasound images. In *2023 9th International Conference on Information Technology Trends (ITT)* (pp. 117–122). IEEE.

Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. Journal Européen Des Systèmes Automatisés 58, no. 5: 983–990. https://doi.org/10.18280/jesa.580512.

Prediction of heart disease using grey wolf optimization-based extreme learning machine

Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.

Al-Tashi, Q. Rais, H. Jadid, S. (2019). Feature selection method based on grey wolf optimization for coronary artery disease classification, in: Advances in Intelligent Systems and Computing. https://doi.org/10.1007/978-3-319-99007-1_25.

Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204.

Anand, Nemalikanti , Sudhakar Uppalapati, Ankammarao Padamurthy , Panchagnula Kishore Kumar, G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy, July 23, 1–37. https://doi.org/10.1115/1.4069225.

Chaka, K. Le Thanh, N. Flamary, R. Belleudy, C. (2018). Performance comparison of the KNN and SVM classification algorithms in the emotion detection system EMOTICA, Int J Sens Netw Data Commun 07 (2018). https://doi.org/10.4172/2090-4886.1000153.

Chicco, D. Jurman, G. (2020). Machine learning can predict survival of patients with heart failure from serum creatinine and ejection fraction alone, BMC Med Inform Decis Mak 20. https://doi.org/10.1186/s12911-020-1023-5.

Choudhary S. , C.H. Kandikattu , S. Kumar , M.P. Kantipudi and M. Kumar , (2024). Enhancing Cybersecurity Through Combined Convolutional Neural Network-Gated Recurrent Unit Approach for Distributed Denial of Service Attack Detection, *2024 1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR),* Muscat, Oman, pp. 1–6, doi: 10.1109/ICIESTR60916.2024.10798189.

Ghosh, P. Azam, S. Jonkman, M. Karim, A. Shamrat, F.M.J.M. Ignatious, E. Shultana, S. Beeravolu, A.R. De Boer, F. (2021). Efficient prediction of cardiovascular disease using machine learning algorithms with relief and lasso feature selection techniques, IEEE Access 9, 1–15.

Hassannataj Joloudari J. Azizi, F. Nematollahi, M.A. Alizadehsani, R. Hassannataj Jeloudari, E. Nodehi, I. Mosavi, A. (2021). GSVMA: A Genetic Support Vector Machine ANOVA Method for CAD Diagnosis, Front Cardiovasc Med 8. https://doi.org/10.3389/fcvm.2021.760178.

Jain, Ayushi , Vaibhav Saini, Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework. In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120–133. Cham: Springer Nature Switzerland.

Kantipudi M.P. , Kumar S. , and Jha A.K. (2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.

Latha, C.B.C. Jeeva, S.C. (2019). Improving the accuracy of prediction of heart disease risk based on ensemble classification techniques, Inform Med Unlocked 16. https://doi.org/10.1016/j.imu.2019.100203.

Liu, X. Fu, H. (2014). PSO-based support vector machine with cuckoo search technique for clinical disease diagnoses, Scientific World Journal. https://doi.org/10.1155/2014/548483.

Lu, W.J. Liang, M. Hao, C. (2017). Particle swarm optimisation-support vector machine optimised by association rules for detecting factors inducing heart diseases, Journal of Intelligent Systems 26. https://doi.org/10.1515/jisys-2016-0014.

Nadimi-Shahraki, M.H. Taghian, S. Mirjalili, S. (2021). An improved grey wolf optimizer for solving engineering problems, Expert Syst Appl 166. https://doi.org/10.1016/j.eswa.2020.113917.

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). enhancing health product traceability on the blockchain: A novel approach for supply chain management inspection to AI, EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, doi: 10.4108/eetpht.10.5544.

Ravi, T. Kumar, K.S. (2023). Detection and classification of power quality disturbances using stock well transform and improved grey wolf optimization-based kernel extreme learning machine, IEEE Access 11 (2023). https://doi.org/10.1109/ACCESS.2023.3286308.

Saiyed N. and Kantipudi M.V.V. (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13.

Subanya, B. Rajalaxmi, R.R. (2014). Feature selection using artificial bee colony for cardiovascular disease classification, in: *2014 International Conference on Electronics and Communication Systems*, ICECS.

https://doi.org/10.1109/ECS.2014.6892729.
Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 1–10.
Supriya, K. , Anitha, A. (2024). Survival analysis of superficial bladder cancer patients using DeepSurv and Cox models, In: 2024 Second International Conference on Emerging Trends in Information Technology and Engineering (ICETITE), 2024: pp. 1–7.
Uppalapati, Sudhakar , Prabhu Paramasivam, Naveen Kilari , Jasgurpreet Singh Chohan, Praveen Kumar Kanti , Harinadh Vemanaboina, Leliso Hobicho Dabelo , and Rupesh Gupta . (2025). Precision biochar yield forecasting employing random forest and xgboost with taylor diagram visualization. Scientific Reports 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.
Vieira, S.M. Mendonça, L.F. Farinha, G.J. Sousa, J.M.C. Modified binary PSO for feature selection using SVM applied to mortality prediction of septic patients, Applied Soft Computing Journal 13. https://doi.org/10.1016/j.asoc.2013.03.021.
Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. Journal Européen Des Systèmes Automatisés 58, no. 5: 983–990. https://doi.org/10.18280/jesa.580512.
Wang, J. Rao, C. Goh, M. Xiao, X. (2023). Risk assessment of coronary heart disease based on cloud-random forest, Artif Intell Rev 56 (2023). https://doi.org/10.1007/s10462-022-10170-z.

Enhancing early detection of diabetic retinopathy using vision transformer and classification models

Khan IU , Raiaan MAK , Fatema K , Azam S , Rashid RU , Mukta SH , et al . (2023). A computer-aided diagnostic system to identify diabetic retinopathy, utilizing a modified compact convolutional transformer and low-resolution images to reduce computation time. Biomedicines. 11(6):1566.
Adak C , Karkera T , Chattopadhyay S , Saqib M. Detecting severity of diabetic retinopathy from fundus images using ensembled transformers. *arXiv Preprint* . 2023;arXiv:2301.00973.
Mutawa AM , Sruthi S. (2022). Diabetic retinopathy classification using vision transformer. In: 2022 6th European Conference on Electrical Engineering & Computer Science (ELECS). IEEE; pp.25–30.
Mohan NJ , Murugan R , Goel T , Roy P. (2022). Vit-DR: Vision transformers in diabetic retinopathy grading using fundus images. In: *2022 IEEE 10th Region 10 Humanitarian Technology Conference (R10-HTC)*. IEEE; p. 167–72.
Yu Z , Yang X , Sweeting GL , Ma Y , Stolte SE , Fang R , et al . (2022). Identify diabetic retinopathy-related clinical concepts and their attributes using transformer-based natural language processing methods. BMC Med Inform Decis Mak. 22(Suppl 3):255.
Wang Z , Lu H , Yan H , Kan H , Jin L. (2023). Vision transformer adapter-based hyperbolic embeddings for multi-lesion segmentation in diabetic retinopathy. Sci Rep.13(1):11178.
AlDahoul N , Karim HA , Tan MJT , Momo MA , Fermin JL (2021). Encoding retina image to words using ensemble of vision transformers for diabetic retinopathy grading. F1000Research. 10(948):948.
Jin X , Li H , Li R.D. , (2022). Former: Dual-path transformers for geometric and appearance features reasoning in diabetic retinopathy grading. In: Chinese Conference on Pattern Recognition and Computer Vision (PRCV). Cham: Springer Nature Switzerland; pp. 401–16.
Zhou Z , Niu C , Yu H , Zhao J , Wang Y , Dai C. (2023). Diagnosis of retinal diseases using the vision transformer model based on optical coherence tomography images. In: *SPIE-CLP Conference on Advanced Photonics 2022*. SPIE; pp. 1260102.
He J , Wang J , Han Z , Ma J , Wang C , Qi M. (2023). An interpretable transformer network for the retinal disease classification using optical coherence tomography. Sci Rep. 13(1):3637,2023.
Sun R , Li Y , Zhang T , Mao Z , Wu F , Zhang Y. (2021). Lesion-aware transformers for diabetic retinopathy grading. In: Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition. pp. 10938–10947.
Khandelwal A , Mishra AK . (2019). Design simulation and analysis of enhanced diabetic retinopathy using convolutional neural network. Int J Res Anal Rev, 6(3):pp.660–663.
Luo X , Pu Z , Xu Y , Wong WK , Su J , Dou X , et al . (2021). MVDRNet: Multi-view diabetic retinopathy detection by combining DCNNs and attention mechanisms. Pattern Recognition. pp.120:108104.
Li R , Liang H , Shi Y , Feng F , Wang X. (2020). Dual-CNN: A convolutional language decoder for paragraph image captioning. Neurocomputing. pp.396:92–101.

World Health Organization. Diabetes [cited 2025 Jun 25]. Available from: https://www.who.int/newsroom/fact-sheets/detail/diabetes.
Hussain M. (2023). Exudate detection: integrating retinal-based affine mapping and design flow mechanism to develop lightweight architectures. IEEE Access, Vol.11, pp.125185–125203.
Kulkarni P , Reddy KS (2025). An OGFA+ CNN Approach for Multi-Level Disease Identification in Fundus Images. IEEE Access Vol.13, pp. 100234 – 100246.
Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). “Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques,” Scientific Reports, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.
Saiyed N. and Kantipudi M.V.V. (2024). “Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations,” International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13, 2024.
Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M. V. V. Prasad Kantipudi , (2024). “A machine learning-based optimization algorithm for wearable wireless sensor networks,” International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 1–10.
Jain, Ayushi , Vaibhav Saini, Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). “Revolutionizing autonomous vehicle intelligence with cutting-edge spatial crowdsourcing framework.” In International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media, pp. 120–133. Cham: Springer Nature Switzerland, 2023.
Vikram M. , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). “Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach.” Journal Européen Des Systèmes Automatisés 58, no. 5 : 983–990. https://doi.org/10.18280/jesa.580512.
Uppalapati, Sudhakar , Prabhu Paramasivam, Naveen Kilari , Jasgurpreet Singh Chohan, Praveen Kumar Kanti , Harinadh Vemanaboina, Leliso Hobicho Dabelo , and Rupesh Gupta . (2025). “Precision biochar yield forecasting employing random forest and XGBoost with taylor diagram visualization.” Scientific Reports 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.

Deep learning based non-invasive blood group prediction from fingerprint patterns

Buchade A.C. and M.P. Kantipudi , Recent trends on brain tumor detection using hybrid deep learning methods, Revue d’Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, Feb. 2024, doi: 10.18280/ria.380111.
Aamir, Y. , Masood, R. and Irshad, N. , 2022. Relationship between pattern of fingerprints and blood groups. Pakistan Journal of Medical and Health Sciences, 16(9). https://doi.org/10.53350/pjmhs22169698
Adgaonkar, A. , Vinoth, R. and Raghuveer, K. , (2025). AI-driven classification and prediction of blood groups through image processing. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.5085490
Anand, Nemalikanti , Sudhakar Uppalapati, Ankammarao Padamurthy , Panchagnula Kishore Kumar, G Naveen Kumar , and Harinadh Vemanaboina . Building Enhanced Neural Network Models to Predict Energy Storage Density of Composite Materials for Low-Temperature Thermochemical Energy Storage. Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy, July 23, 2025, 1–37. https://doi.org/10.1115/1.4069225.
Chaudhary, S. , Deuja, S. and Alam, M. , 2017. Fingerprints as an alternative method to determine ABO and Rh blood groups. Journal of Nepal Medical Association, 56(208). https://doi.org/10.31729/JNMA.3374
Chen, Y.W. , Hu, X. and Zhu, Y. , 2024. Real-time non-invasive hemoglobin prediction using deep learning-enabled smartphone imaging. BMC Medical Informatics and Decision Making, 24(1). https://doi.org/10.1186/s12911-024-02585-1
Cummins, H. and Midlo, C. , 1943. Fingerprints, palms and soles: An introduction to dermatoglyphics. Dover Publications.
Deepalakshmi , 2024. Blood group determination using fingerprint. MATEC Web of Conferences, 392, p.1069. https://doi.org/10.1051/matecconf/202439201069
Elahee, F. , Mim, F. and Naquib, F.B. , 2020. Comparative study of deep learning-based finger vein biometric authentication systems. *Proceedings of ICAICT, IEEE*. https://doi.org/10.1109/ICAICT51780.2020.9333515
Islam, M.S. , Islam, T. and Hasan, M. , 2021. Approaching deep convolutional neural network for biometric recognition based on fingerprint database. In: *International Conference on Pattern Recognition and Machine Intelligence.* Springer. https://doi.org/10.1007/978-3-030-80126-7_41
Jain, Ayushi , Vaibhav Saini, Ayush Dodia , and M.V.V. Prasad Kantipudi . Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework. In *International Conference on*

Pervasive Knowledge and Collective Intelligence on Web and Social Media, pp. 120–133. Cham: Springer Nature Switzerland, 2023.

Jantz, R.L. and Owsley, D.W. , 2001. Ridge density and the determination of ancestry and sex from fingerprints. American Journal of Physical Anthropology, 114(3), pp.307–317. https://doi.org/10.1002/ajpa.10034

Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . Virtual Prédiction of Residual Stresses in Laser Welding Process Using Machine Learning Technique an Industry 4.0 Approach. Journal Européen Des Systèmes Automatisés 58, no. 5 (May 31, 2025): 983–990. https://doi.org/10.18280/jesa.580512.

Jabbar M.A. , M.P. Kantipudi , A.M. Madureira , M.B.I. Reaz , and S.-L. Peng , Machine learning methods for signal, image and speech processing. 2022. doi: 10.1201/9781003338789.

Kantipudi M.P. , S. Kumar , and A.K. Jha , Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, Jan. 2021, doi: 10.1155/2021/2676780.

Prashanth M.S. , U. Maheswari V. R. Aluvalu , and M.V.V.P. Kantipudi , Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI, EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, Mar. 2024, doi: 10.4108/eetpht.10.5544.

Mehta, A.A. , Mehta, A.A. , Shah, A.M. and Shah, P.D. , 2016. Dermatoglyphics and blood groups: an association study. Journal of Clinical and Diagnostic Research, 10(2), pp.CC05–CC07. https://doi.org/10.7860/JCDR/2016/16768.7229

Moslemi, C. , Sækmose, S.G. and Larsen, R. , 2024. A deep learning approach to prediction of blood group antigens from genomic data. Transfusion, 64(9). https://doi.org/10.1111/trf.18013

Saiyed N. and M.V.V. Kantipudi , Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13, 2024.

Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi, A machine learning-based optimization algorithm for wearable wireless sensor networks, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 1–10, 2024.

Nihar, T. , Yeswanth, K. and Prabhakar, K. , 2024. Blood group determination using fingerprint. MATEC Web of Conferences. https://doi.org/10.1051/matecconf/202439201069

Panjavarnam, B. , Saranya, P. and Anitha, S. , 2019. Non-invasive blood group detection. Journal of Emerging Technologies and Innovative Research, 6(5).

Prasad, M.L. , Niharika, K. and Harshitha, D. , 2024. Blood group prediction using fingerprint. Deleted Journal. https://doi.org/10.47392/irjaeh.2024.0392

Purushothama, B. , Shankar, T. and Sanjay, D. , 2024. Integrated health monitoring system using fingerprint and disease risk prediction. International Journal of Advanced Research in Science, Communication and Technology. https://doi.org/10.48175/ijarsct-22328

Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204, 2024.

Choudhary S. , C.H. Kandikattu , S. Kumar , M.P. Kantipudi and M. Kumar , Enhancing Cybersecurity Through Combined Convolutional Neural Network-Gated Recurrent Unit Approach for Distributed Denial of Service Attack Detection, 2024 1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR), Muscat, Oman, 2024, pp. 1–6, doi: 10.1109/ICIESTR60916.2024.10798189.

Shaik, K.S.G. and Umashankar, N. , 2024. Fingerprint based blood group detection: technologies and advancements. Journal of Biometric Advances. https://doi.org/10.31224/4159

Shaik, R.U. , Anusha, P. and Maddinala, V.V.K. , 2024. Fingerprint-based blood group prediction. In: Fingerprint Recognition Technologies. CRC Press. https://doi.org/10.1201/9781003596776-23

Sivamurugan, C. , Perumal, B. and Siddarthha, Y. , 2024. Enhanced blood group prediction with fingerprint images using deep learning. Proceedings of the ICACRS, IEEE. https://doi.org/10.1109/icacrs62842.2024.10841725

Uppalapati, Sudhakar , Prabhu Paramasivam, Naveen Kilari , Jasgurpreet Singh Chohan, Praveen Kumar Kanti , Harinadh Vemanaboina, Leliso Hobicho Dabelo , and Rupesh Gupta . Precision Biochar Yield Forecasting Employing Random Forest and XGBoost with Taylor Diagram Visualization. Scientific Reports 15, no. 1 (February 27, 2025). https://doi.org/10.1038/s41598-025-91450-w.

Agrawal V. , M.P. Kantipudi , and J. Jagtap , Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports, vol. 15, p. 17311, 2025. doi: 10.1038/s41598-025-01823-4.

Saini V. , A. Jain , Anurag , and M.V.V.P. Kantipudi , An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in *Proc. 15th Int. Conf. Soft Comput. Pattern Recognit* . (SoCPaR 2023), A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer, 2025. doi:10.1007/978-3-031-81086-2_18.

Vijaykumar, P.N. and Ingle, D.R. , 2021. A novel approach to predict blood group using fingerprint map reading. Proceedings of the I2CT Conference, IEEE. https://doi.org/10.1109/I2CT51068.2021.9418114

Waykule, V. , 2024. Blood group detection using fingerprint images . International Journal for Science Technology and Engineering, 11(3). https://doi.org/10.22214/ijraset.2024.65275

Yu, S. , 2020. Fingerprint recognition based on spectral minutiae representation and deep learning. Dissertation.

Optimized deep neural framework for multi-stage classification of Alzheimer's disease severity

Agrawal V. , M.P. Kantipudi , and J. Jagtap , “Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques,” Scientific Reports, vol. 15, p. 17311, 2025. doi: 10.1038/s41598-025-01823-4.

Ahmadi, M. , Javaheri, D. , Khajavi, M.J. , Mirsadeghi, S. , and Javidan, R. (2024). A deeply supervised adaptable neural network for diagnosis and classification of Alzheimer's severity using multitask feature extraction. PLoS One, 19(3), e0297996. https://doi.org/10.1371/journal.pone.0297996

Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , “Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis,” International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204, 2024.

AlzheimerNet Team . (2023). AlzheimerNet: An effective deep learning based proposition for Alzheimer's disease stages classification from functional brain changes in magnetic resonance images. IEEE Access, 11, 12345–12359. https://doi.org/10.1109/access.2023.3244952

Bharat Kumar, G.J. 2018. Internet of Things (IoT) and Cloud Computing based Persistent Vegetative State Patient Monitoring System: A remote Assessment and Management . *2018 International Conference on Computational Techniques, Electronics and Mechanical Systems (CTEMS),* Belgaum, India, pp. 301–305. https://doi.org/10.1109/CTEMS.2018.8769175

Buchade A.C. and M.P. Kantipudi , “Recent trends on brain tumor detection using hybrid deep learning methods,” Revue d’Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, Feb. 2024, doi: 10.18280/ria.380111.

Choi, J.Y. , and Lee, B. (2020). Combining of multiple deep networks via ensemble generalization loss, based on MRI images, for Alzheimer's disease classification. IEEE Signal Processing Letters, 27, 1630–1634. https://doi.org/10.1109/LSP.2020.2964161

Choudhary S. , C.H. Kandikattu , S. Kumar , M.P. Kantipudi and M. Kumar , “Enhancing cybersecurity through combined convolutional neural network-gated recurrent unit approach for distributed denial of service attack detection,” 2024 1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR), Muscat, Oman, 2024, pp. 1–6, doi: 10.1109/ICIESTR60916.2024.10798189.

Gangone, A. , Swapna, M. and Bharat Kumar, G.J. 2025. Malaria Prediction Using Fusion Learning with Enhanced Trust and Interpretability. In: Gunjan, V.K. and Zurada, J.M. (eds) Proceedings of 5th International Conference on Recent Trends in Machine Learning, IoT, Smart Cities and Applications. ICMISC 2024. Lecture Notes in Networks and Systems, vol 1181. Singapore: Springer. https://doi.org/10.1007/978-981-97-8861-3_26

Isunuri, B.V. (2022). Alzheimer's severity classification using transfer learning and residual separable convolution network. In Proceedings of ACM International Conference. https://doi.org/10.1145/3571600.3571610

Itkyal, V.S. , Abrol, A. , LaGrow, T.J. , and Calhoun, V.D. (2023). Voxel-wise fusion of resting fMRI networks and gray matter volume for Alzheimer's disease classification using deep multimodal learning. Research Square. https://doi.org/10.21203/rs.3.rs-3740218/v1

Jabbar M.A. , M.P. Kantipudi , A.M. Madureira , M.B.I. Reaz , and S.-L. Peng , Machine learning methods for signal, image and speech processing. 2022. doi: 10.1201/9781003338789.

Jain, Ayushi , Vaibhav Saini , Ayush Dodia , and M.V.V. Prasad Kantipudi . “Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework.” In *International Conf e rence on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120–133. Cham: Springer Nature Switzerland, 2023.

Kantipudi M.P. , S. Kumar , and A.K. Jha , “Scene text recognition based on bidirectional LSTM and deep neural network,” Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, Jan. 2021, doi: 10.1155/2021/2676780.

Kayalvizhi, M. , Kumar, G.S. , Tushal, V. , Deepika, B. , and Rani, M.A. (2023). Deep learning-based severity detection in Alzheimer's disease: A comprehensive study on cognitive impairment. In Proceedings of ICDSAAI 2023. https://doi.org/10.1109/icdsaai59313.2023.10452506

Liu, S. , Zheng, Y. , Li, H. , Zhang, J. , Zhou, C. , Xu, K. , and Wang, Y. (2023). Improving Alzheimer diagnoses with an interpretable deep learning framework: Including neuropsychiatric symptoms. Neuroscience, 523, 75–85. https://doi.org/10.1016/j.neuroscience.2023.09.003

Mudiyala, A. , and Rao, B.S. (2023). Enhanced classification of Alzheimer's disease stages via weighted optimized deep neural networks and MRI image analysis. Traitement du Signal, 40(5). https://doi.org/10.18280/ts.400538

Mudiyala, A. , and Rao, B.S. (2023). Xception-Fractalnet: Hybrid deep learning based multi-class classification of Alzheimer's disease. *Computers, Materials & Continua*, 74(1). https://doi.org/10.32604/cmc.2023.034796

Prajna, M. , Saumya, Y.M. , Shetty, S. , and Kumar, S. (2024). Alzheimer's disease prediction using deep learning. IEEE Discover, 2024. https://doi.org/10.1109/discover62353.2024.10750739

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , “Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI,” *EAI Endorsed Transactions on Pervasive Health and Technology*, vol. 10, Mar. 2024, doi: 10.4108/eetpht.10.5544.

Ramzan, F. , Khan, M.U.G. , Rehmat, A. , and Bashir, A.K. (2020). A deep learning approach for automated diagnosis and multi-class classification of Alzheimer's disease stages using resting-state fMRI and residual neural networks. Journal of Medical Systems, 44(2), 1–15. https://doi.org/10.1007/S10916-019-1475-2

Reyes Vázquez, I. , Cedeño, F.J. , Loza, J. , and Hernández, C. (2023). Classification of Alzheimer disease's severity using support vector machine and deep feature extraction of convolutional neural networks: A contrasting of methodologies. In *Communications in Computer and Information Science* (Vol. 1567, pp. 241–255). Springer. https://doi.org/10.1007/978-3-031-45438-7_19

Saini V. , A. Jain , Anurag , and M.V.V.P. Kantipudi , “An efficient approach for improving the performance of autonomous vehicle using advanced computer vision,” in *Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023),* A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer, 2025. doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and M.V.V. Kantipudi , “Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations,” *International Journal of Computing and Digital Systems*, vol. 17, no. 1, pp. 1–13, 2024.

Sarma, M.P. , and Chatterjee, S. (2024). Multistage diagnosis of Alzheimer's disease from clinical data using ‘deep ensemble learning’. Journal of Artificial Intelligence and Applications, 4(1), 44–56. https://doi.org/10.54364/jaiai.2024.1109

Sarraf, S. , DeSouza, D.D. , Anderson, J.A.E. , and Bouchard, M. (2016). DeepAD: Alzheimer's disease classification via deep convolutional neural networks using MRI and fMRI. bioRxiv. https://doi.org/10.1101/070441

Sharma, R. , Goel, T. , and Murugan, R.B. (2022). An optimized deep learning network for prognosis of Alzheimer's disease using structural magnetic resonance imaging. In Proceedings of R10-HTC 2022. https://doi.org/10.1109/R10-HTC54060.2022.9929626

Slimi, H. , Balti, A. , Abid, S. , and Graa, M. (2024). A combinatorial deep learning method for Alzheimer's disease classification-based merging pretrained networks. Frontiers in Computational Neuroscience, 18, Article 1444019. https://doi.org/10.3389/fncom.2024.1444019

Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M. V. V. Prasad Kantipudi, “A machine learning-based optimization algorithm for wearable wireless sensor networks,” International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 1–10, 2024.

Tabarestani, S. , Eslami, M. , Cabrerizo, M. , Adjouadi, M. , Barreto, A. , and Loewenstein, D. (2022). A tensorized multitask deep learning network for progression prediction of Alzheimer's disease. Frontiers in Aging Neuroscience, 14, Article 810873. https://doi.org/10.3389/fnagi.2022.810873

Wu, S. , Venkataraman, A. , and Ghosal, S. (2023). GIRUS-net: A multimodal deep learning model identifying imaging and genetic biomarkers linked to Alzheimer's disease severity. In Proceedings of the IEEE EMBC 2023. https://doi.org/10.1109/embc40787.2023.10341000

Yang, M. , Zhao, Y. , Yu, H. , Huang, H. , Shen, L. , Zhou, W. , Wang, J. , Wang, L. , and Li, Y. (2025). A multi-label deep learning model for detailed classification of Alzheimer's disease. *Actas Españolas de Psiquiatría,* 53(1). https://doi.org/10.62641/aep.v53i1.1728.

Automated classification of diabetic retinopathy in fundus images using a hybrid CNN

Aarti , Saurabh, K. and Swathi, A. 2025. Lung cancer detection using machine learning. In: [Book Editor(s)] (eds) [Book Title]. IGI Global, pp. [page range if available]. https://doi.org/10.4018/979-8-3693-7352-1.ch006

Agrawal V. , M.P. Kantipudi , and J. Jagtap , “Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques,” Scientific Reports, vol. 15, p. 17311, 2025. doi: 10.1038/s41598-025-01823-4.

Akkepalli, S. and Sagar, K. 2024. Anomaly-based network intrusion detection using hybrid CNN, Bi-LSTM deep learning techniques. In: *Proceedings of the 4th International Conference on Innovative Research in Applied Science, Engineering and Technology (IRASET)* , FEZ, Morocco, pp. 1–6. IEEE. https://doi.org/10.1109/IRASET60544.2024.10548678

Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , “Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis,” International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204, 2024.

Amin, J. , Sharif, M. and Yasmin, M. 2016. A review on recent developments for detection of diabetic retinopathy. Scientifica, May 2016, pp. 1–20.

Antal, B. and Hajdu, A. 2012. An ensemble-based system for microaneurysm detection and diabetic retinopathy grading. IEEE Transactions on Biomedical Engineering, 59(6), pp. 1720–1726.

Bilal, M. , Ali, G. , Iqbal, M.W. , Anwar, M. , Malik, M.S.A. and Kadir, R.A. 2022. Auto-prep: Efficient and automated data preprocessing pipeline. IEEE Access, 10, pp. 107764–107784.

Buchade A.C. and M.P. Kantipudi , “Recent trends on brain tumor detection using Hybrid deep learning methods,” Revue d’Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, Feb. 2024, doi: 10.18280/ria.380111.

Deepika, V. , Dorairaj, R. , Namuduri, K. and Thompson, H. 2004. Automated detection and classification of vascular abnormalities in diabetic retinopathy. *Proc. 38th Asilomar Conference on Signals, Systems and Computers*, 2, pp. 1625–1629.

Dimlo, U.M.F. , Narasimharao, J. , Laxmaiah, B. , Srinath, E. , Rani, D.S. , Sandhyarani, S. and Naresh Kumar, V. 2022. An improved blind deconvolution for restoration of blurred images using ringing removal processing. *Proc. Fourth International Conference on Computer and Communication Technologies (IC3T 2022)*, Springer Nature Singapore, pp. 357–366.

Gangone, A. , Abraham, A. , Gangone, S. and Bharat Kumar, G.J. 2024. Malaria prediction using fusion learning with enhanced trust and transparency. In: *Proceedings of the 2024 Intelligent Systems and Machine Learning Conference (ISML)*, Hyderabad, India, pp. 491–497. IEEE. https://doi.org/10.1109/ISML60050.2024.11007407

Jabbar M.A. , M.P. Kantipudi , A.M. Madureira , M.B.I. Reaz , and S.-L. Peng , Machine learning methods for signal, image and speech processing. 2022. doi: 10.1201/9781003338789.

Kantipudi M.P. , S. Kumar , and A.K. Jha , “Scene text recognition based on bidirectional LSTM and deep neural network,” Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, Jan. 2021, doi: 10.1155/2021/2676780.

Lazar, I. and Hajdu, A. 2011. Microaneurysm detection in retinal images using a rotating cross-section based model. Proc. *IEEE International Symposium on Biomedical Imaging*, Mar. 2011, pp. 1405–1409.

Li, H. , Hsu, W. , Lee, M.L. and Wong, T.Y. 2005. Automatic grading of retinal vessel caliber. IEEE Transactions on Biomedical Engineering, 52(7), pp. 1352–1355.

Narasimha-Iyer, H. , Smith, R.T. , Rabbani, A.E. , Zheng, B. , Hanson, C.E. and Abramoff, M.D. 2006. Robust detection and classification of longitudinal changes in color retinal fundus images for monitoring diabetic retinopathy. IEEE Transactions on Biomedical Engineering, 53(6), pp. 1084–1098.

Pandu, J. , Reddy, G.R.S. and Babu, C.A. 2024. CSWin Transformer-CNN encoder and multi-head self-attention based CNN decoder for robust medical segmentation. Journal of Soft Computing and Data Mining, vol. 5, no. 1. https://doi.org/10.30880/jscdm.2024.05.01.005

Ram, K. , Joshi, G.D. and Sivaswamy, J. 2011. A successive clutter-rejection based approach for early detection of diabetic retinopathy. IEEE Transactions on Biomedical Engineering, 58(3), pp. 664–673.

Rao, S.V.A. , Kumar, S.V. , Damudi, F.Z. , Nikhil, K. and Nazimuddin, M. 2023. Facial recognition system using LBPH algorithm by open source computer vision library. *Conference on Mathematical Sciences and Applications in Engineering (CMSAE-2021)*, pp. 100–110.

Saini V. , A. Jain , Anurag , and M.V.V.P. Kantipudi , “An efficient approach for improving the performance of autonomous vehicle using advanced computer vision,” in *Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023)*, A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer, 2025. doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and M.V.V. Kantipudi , “Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations,” International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13, 2024.

Sopharak, S. and Uyyanonvara, B. 2007. Automatic exudates detection from diabetic retinopathy retinal image using fuzzy C-means and morphological methods. *Proc. 3rd IASTED International Conference on Advanced Computer Science and Technology*, pp. 359–364.
Trucco, E. , Li, Y. , Ruggeri, A. , MacGillivray, T. , Abràmoff, M.D. , Fleming, P.J. and Russell, S.J. 2013. Validating retinal fundus image analysis algorithms: Issues and a proposal. Investigative Ophthalmology & Visual Science, 54(5), p. 3546.
Vimala, G.A.G. and Kajamohideen, S. 2014. Diagnosis of diabetic retinopathy by extracting blood vessels and exudates using retinal color fundus images. WSEAS Transactions on Biology and Biomedicine, 11, pp. 20–28.
Wilkinson, C.P. , Ferris, F.L. , Klein, R.E. , Lee, P.P. , Agardh, C.D. , Davis, M. , Dills, D.D. and Wong, A.C. 2003. Proposed international clinical diabetic retinopathy and diabetic macular edema disease severity scales. Ophthalmology, 110(9), pp. 1677–1682.

Oral cancer detection using deep learning

Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.
Aluvalu R. , Asha V. , Anandhi R.J. , Prasad Kantipudi M.V.V. , Bali J. , and Bhanja M. (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204.
Anand, Nemalikanti , Sudhakar Uppalapati, Ankammarao Padamurthy , Panchagnula Kishore Kumar, G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy, July 23, 1–37. https://doi.org/10.1115/1.4069225.
Buchade A.C. and Kantipudi M.P. , (2024). Recent trends on brain tumor detection using hybrid deep learning methods, Revue d'Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.
Choudhary S. , Kandikattu C.H. , Kumar S. , Kantipudi M.P. and Kumar M. (2024). Enhancing cybersecurity through combined convolutional neural network-gated recurrent unit approach for distributed denial of service attack detection, 2024 1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR), Muscat, Oman, pp. 1–6, doi: 10.1109/ICIESTR60916.2024.10798189.
Gangone, A. , Abraham, A. , Gangone, S. and Bharat Kumar, G.J. (2024). Malaria prediction using fusion learning with enhanced trust and transparency. 2024 Intelligent Systems and Machine Learning Conference (ISML), Hyderabad, India, pp. 491–497. https://doi.org/10.1109/ISML60050.2024.11007407.
Gangone, A. , Swapna, M. and Bharat Kumar, G.J. (2025). Malaria prediction using fusion learning with enhanced trust and interpretability. In: Gunjan, V.K. and Zurada, J.M. (eds) Proceedings of the 5th International Conference on Recent Trends in Machine Learning, IoT, Smart Cities and Applications (ICMISC 2024). Lecture Notes in Networks and Systems, vol. 1181. Singapore: Springer. https://doi.org/10.1007/978-981-97-8861-3_26
Goodfellow, I. , Bengio, Y. and Courville, A. (2016). Deep learning. Cambridge: MIT Press.
Hochreiter, S. and Schmidhuber, J. (1997). Long short-term memory. Neural Computation, 9(8), pp.1735–1780.
Jabbar M.A. , Kantipudi M.P. , Madureira A.M. , Reaz M.B.I. , and Peng S.-L. , (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.
Jain, Ayushi , Vaibhav Saini, Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing autonomous vehicle intelligence with cutting-edge spatial crowdsourcing framework . In International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media, pp. 120–133. Cham: Springer Nature Switzerland.
Kantipudi M.P. , Kumar S. , and Jha A.K. (2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.
Litjens, G. , Kooi, T. , Bejnordi, B.E. , Setio, A.A. , Ciompi, F. , Ghafoorian, M. , van der Laak, J.A. , van Ginneken, B. and Sánchez, C.I. (2017). A survey on deep learning in medical image analysis. Medical Image Analysis, 42, pp.60–88.
Pandu, J. , Kudtala, U. and Prabhakar, B. (2023). Skin cancer detection and classification using DWT-GLCM with probabilistic neural networks. In: Paunwala, C. et al. (eds) Biomedical Signal and Image Processing with Artificial Intelligence. EAI/Springer Innovations in Communication and Computing. Cham: Springer. https://doi.org/10.1007/978-3-031-15816-2_10

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI, EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, doi: 10.4108/eetpht.10.5544.

Saini V. , Jain A. , Anurag , and Kantipudi M.V.V.P. (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in *Proc. 15th Int. Conf. Soft Comput. Pattern Recognit.* (SoCPaR 2023), A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer. doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and Kantipudi M.V.V. (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13, 2024.

Srividya, A. , Athiraja, A. , Thouti, S. , Greeshma, Y. , Vajjala, K.V.K. and Devi, T.A. (2024). Enhancing breast cancer diagnosis with YOLOv5: A computer-aided approach. In: Proceedings of the 5th International Conference on Smart Electronics and Communication (ICOSEC), Trichy, India, pp. 1105–1111. IEEE. https://doi.org/10.1109/ICOSEC61587.2024.10722593

Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 1–10.

Uppalapati, Sudhakar , Prabhu Paramasivam, Naveen Kilari , Jasgurpreet Singh Chohan, Praveen Kumar Kanti , Harinadh Vemanaboina, Leliso Hobicho Dabelo , and Rupesh Gupta . (2025). Precision biochar yield forecasting employing random forest and XGBoost with taylor diagram visualization. Scientific Reports 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.

Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 Approach. Journal Européen Des Systèmes Automatisés 58, no. 5: 983–990. https://doi.org/10.18280/jesa.580512.

Welikala, R.A. (2020). Automated detection and classification of oral lesions using deep learning for early detection of oral cancer. IEEE Access, 8, pp.132677–132693.

WHO . (2021). Oral health fact sheet. Geneva: World Health Organization.

Interpretable deep learning for enhanced clinical decision making in brain tumour detection using explainable AI

Darwish, S.M. , Abu Shaheen, L.J. & Elzoghabi, A.A. (2023). A new medical analytical framework for automated detection of MRI brain tumor using evolutionary quantum inspired level set technique. Bioengineering 10(7): 819. https://doi.org/10.3390/bioengineering10070819

Gao, H. & Jiang, X. 2013. Progress on the diagnosis and evaluation of brain tumors. Cancer Imaging 13(4): 466–481. https://doi.org/10.1102/1470-7330.2013.0039

Gaur, P. , Srivastava, S. , Rawat, S. , et al . 2021. Explainable AI for medical imaging: Understanding deep learning outcomes for clinical applications. Medical Image Analysis 72: 102108.

Holzinger, A. , Carrington, A. & Müller, H. 2020. Measuring the quality of explanations: The System Causability Scale (SCS). Comparing human and machine explanations. KI – KünstlicheIntelligenz 34(2): 193–198.

IAES . 2023. Comparative evaluation for detection of brain tumor using machine learning algorithms. IAES International Journal of Artificial Intelligence 12(1): 469–477. https://doi.org/10.11591/ijai.v12.i1.pp469-477

Kendall, A. & Gal, Y. 2017. What uncertainties do we need in Bayesian deep learning for computer vision? Advances in Neural Information Processing Systems (NeurIPS) 30.

Li, X. , Chen, H. , Qi, X. , Dou, Q. , Fu, C.W. & Heng, P.A. 2018. H-DenseUNet: Hybrid densely connected UNet for liver and tumor segmentation from CT volumes. IEEE Transactions on Medical Imaging 37(12): 2663–2674.

Mallampati, B. , Alfarhood, S. , Ishaq, A. , Rustam, F. , Venukuthala, V. & Ashraf, I.M. 2023. Brain tumor detection using 3D-UNet segmentation features and hybrid machine learning model.

Menze, B.H. , Jakab, A. , Bauer, S. , Kalpathy-Cramer, J. , Farahani, K. , Kirby, J. , et al . 2015. The multimodal brain tumor image segmentation benchmark (BraTS). IEEE Transactions on Medical Imaging 34(10): 1993–2024. https://doi.org/10.1109/TMI.2014.2377694

Rajpurkar, P. & Lungren, M.P. 2023. The current and future state of AI interpretation of medical images. New England Journal of Medicine 388(21): 1981–1990.

Ronneberger, O. , Fischer, P. & Brox, T. 2015. U-Net: Convolutional networks for biomedical image segmentation. In Medical Image Computing and Computer-Assisted Intervention – MICCAI 2015, pp. 234–241.

Selvaraju, R.R. , Cogswell, M. , Das, A. , Vedantam, R. , Parikh, D. & Batra, D. 2017. Grad-CAM: Visual explanations from deep networks via gradient-based localization. In Proceedings of the IEEE International Conference on Computer Vision (ICCV), pp. 618–626.
Shirwaikar, R.D. , Ramesh, K. & Hiremath, A. 2021. A survey on brain tumor detection using machine learning. In 2021 International Conference on Forensics, Analytics, Big Data, Security (FABS). IEEE. https://doi.org/10.1109/FABS52071.2021.9702583
Tonekaboni, S. , Joshi, S. , McCradden, M.D. & Goldenberg, A. 2019. What clinicians want: Contextualizing explainable machine learning for clinical end use. In Proceedings of the 4th Machine Learning for Healthcare Conference. Proceedings of Machine Learning Research 106: 359–380.

Transforming clinical scheduling with technology using MERN stack application in healthcare

Anil, N.S. and Sanila, S. 2023. LabNet. International Journal of Advanced Research in Science, Communication and Technology, 16 Aug 2023. https://doi.org/10.48175/ijarsct-12465
Hertel, C. , Gehrt, L. and Gannon, M. 2007. Rescheduling clinical activities in context of activities view. Patent Publication, 13 Jul 2007.
Karthika, S. , Pavithran, S. , Jayakumar, A. and others 2024. WorkGen – A Unified Platform for Workforce Analytics and People Management. Indian Scientific Journal of Research in Engineering and Management, 23 Dec 2024. https://doi.org/10.55041/ijsrem40031
Kavitha, K.R. , Vijayalakshmi, S. , Babu, M. and others 2023. Efficient RFID-Integrated Online Appointment Scheduling System. Proceedings of IEEE ITechSeCom, 18 Dec 2023. https://doi.org/10.1109/itechsecom59882.2023.10435111
Kuiper, A. , Mandjes, M. , de Mast, J. and others 2021. A flexible and optimal approach for appointment scheduling in healthcare. Decision Sciences, 4 May 2021. https://doi.org/10.1111/deci.12517
Lagakis, P. , Logaras, E. , Billis, A. and others 2023. ClinApp: A Microservices-Based Platform for Efficient Medical Visit Scheduling. Studies in Health Technology and Informatics, 29 Jun 2023. https://doi.org/10.3233/SHTI230499
Manikandan, R.P.S. 2024. Doctor Appointment System. International Journal for Research in Applied Science and Engineering Technology, 31 Mar 2024. https://doi.org/10.22214/ijraset.2024.58834
Rs, R. , Shadheem, S. and Surya, S. 2024. Web-based Application for Doctor-Patient Appointment Management System. Journal of ISMAC: The Journal of IoT in Social, Mobile, Analytics, and Cloud, 1 Sep 2024. https://doi.org/10.36548/jismac.2024.3.006
Singh, J. , Shelke, N.A. , Upreti, K. , Divakaran, P. , Lingareddy, N. and Deepika, S. , 2024 , May. Enhancing patient well-being in healthcare through the integration of IoT and neural network. In 2024 International Conference on Emerging Innovations and Advanced Computing (INNOCOMP) (pp. 241–246). IEEE.
Zhu, Q. , Yihui, F. , Zuofeng, L. and others 2017. Clinical knowledge driven healthcare scheduling. *Patent Publication*, 14 Dec 2017.

Healthwise: AI-Based personalized medicine recommendation system

Chen, Y. , Zhang, H. , Li, X. and Sun, J. 2023. Multi-modal deep learning for personalized medicine: Fusion of genomics and EHR. IEEE Access 11: 112345–112359.
Chaitanya, M.K. and Sharma, L.D. , 2024. Automated detection of myocardial infarction using binary Harry Hawks feature selection and ensemble KNN classifier. Computer Methods in Biomechanics and Biomedical Engineering, 27(14), pp.2024–2040.
Kumar, S. , Roy, A. and Das, R. 2023. A personalized medicine recommender system using machine learning algorithms. Proceedings of the International Conference on Bioinformatics and Biomedicine (BIBM): 532–537.
Lee, C. , Wang, Y. , Liu, J. and Zhang, F. 2024. Knowledge graph embedding in personalized drug recommendations. IEEE Transactions on Knowledge and Data Engineering 36(1): 321–333.
Luo, H. and Zhang, F. 2023. Hybrid recommendation system for personalized medicine using NLP and collaborative filtering. Proceedings of the IEEE International Conference on Healthcare Informatics (ICHI): 214–221.
Nguyen, T. , Li, M. , Zhao, P. and Chen, Y. 2023. Leveraging AI for cancer treatment recommendations: A case study on breast cancer. IEEE Reviews in Biomedical Engineering 16: 201–210.

Reddy, P. , Sharma, V. , Gupta, K. and Rao, S. 2024. AI-driven personalized drug recommendation using reinforcement learning. IEEE Access 12: 45012–45021.
Sharma, R. and Bhushan, K. 2023. A survey on AI in personalized healthcare: Methods, applications, and challenges. IEEE Access 11: 118021–118043.
Singh, A.K. , Verma, R. , Nair, P. and Das, S. 2024. Graph neural networks for personalized drug recommendation. IEEE Transactions on Neural Networks and Learning Systems 35(2): 654–666.
Wang, L. , Zhou, X. , Chen, D. and Hu, Y. 2024. Deep personalized recommendations for chronic disease management. IEEE Transactions on Emerging Topics in Computational Intelligence 8(1): 35–47.
Zhao, M. , Liu, Q. , Zhang, Y. and Huang, T. 2023. Explainable deep learning models for disease prediction and personalized treatment. IEEE Journal of Biomedical and Health Informatics 27(1): 88–97.

A novel ensemble model for multiclass skin cancer classification using deep learning

Abbas, T. , Khan, M.A. , Javed, A. , Kadry, S.H. and Saba, T. (2015). Melanoma recognition using hybrid features. Journal of Medical Imaging and Health Informatics 5(6): 1221–1227.
Brinker, T. , Hekler, A. , Enk, C. et al . (2019). Deep learning outperformed 11 pathologists in the classification of histopathological melanoma images. European Journal of Cancer 118: 91–96.
Chollet, F. (2017). Xception: Deep learning with depthwise separable convolutions. In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR): 1251–1258.
Deng, J. , Dong, W. , Socher, R. , Li, L. , Li, K. and Fei-Fei, L. (2009). ImageNet: A large-scale hierarchical image database. In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR): 248–255.
Esteva, A. , Kuprel, B. , Novoa, R.A. et al . (2017). Dermatologist-level classification of skin cancer with deep neural networks. Nature 542: 115–118.
Garnavi, R. , Aldeen, M. and Celebi, M.E. (2010). Classification of skin lesion images using color and hybrid descriptors. In *Proceedings of the International Conference on Digital Image Computing: Techniques and Applications (DICTA)*: 1–8.
Haenssle, H. , Fink, C. , Schneiderbauer, R. et al . (2018). Man against machine: Diagnostic performance of a deep learning convolutional neural network for dermoscopic melanoma recognition in comparison to 58 dermatologists. Annals of Oncology 29(8): 1836–1842.
He, K. , Zhang, X. , Ren, S. and Sun, J. (2016). Deep residual learning for image recognition. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR):* 770–778.
Huang, G. , Liu, Z. , van der Maaten, L. and Weinberger, K.Q. (2017). Densely connected convolutional networks. In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR): 2261 –2269.
LeCun, Y. , Bengio, Y. and Hinton, G. (2015). Deep learning. Nature 521(7553): 436–444.
Litjens, G. , Kooi, T. , Bejnordi, B.E. et al . (2017). A survey on deep learning in medical image analysis. Medical Image Analysis 42: 60–88.
Naseer, S. , Hussain, M. and Togneri, R. 2020. Ensemble deep learning: A review. arXiv preprint arXiv:2005.02357.
Simonyan, K. and Zisserman, A. 2015. Very deep convolutional networks for large-scale image recognition. In *Proceedings of the International Conference on Learning Representations (ICLR).*
Tschandl, P. , Rosendahl, C. and Kittler, H. 2018. The HAM10000 dataset: A large collection of multi-source dermatoscopic images of common pigmented skin lesions. Scientific Data 5(180161): 1–9.
Wang, Y. , Liu, M. and Zhou, G. 2020. Ensemble learning for medical image classification: A review. Artificial Intelligence in Medicine 107(101908): 1–12.

Improving plant disease classification with deep learning based prediction model using explainable artificial intelligence detection

Aarti Gowroju, S. , Begum, M.I.A. and Hosen, A.S.M.S. (2024). Optimal feature selection and classification for Parkinson's disease using deep learning and dynamic bag of features optimization. BioMedInformatics, 4(4), pp. 2223–2250. https://doi.org/10.3390/biomedinformatics4040120
Agrawal V. , M.P. Kantipudi , and J. Jagtap , Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports, vol. 15, p. 17311, 2025.

doi: 10.1038/s41598-025-01823-4.

Benito Fernández, M. De Martínez, D.L. , González-Briones, A. , Chamoso, P. and Corchado, E.S. 2023. Evaluation of XAI models for interpretation of deep learning techniques' results in automated plant disease diagnosis. In Proc. Sustain. Smart Cities Territories Int. Conf., *Cham*, Switzerland: Springer, pp. 417–428.

Bharat Kumar, G.J. 2018a. Internet of Things (IoT) and cloud computing based persistent vegetative state patient monitoring system: A remote assessment and management. In: Proceedings of the 2018 International Conference on Computational Techniques, Electronics and Mechanical Systems (CTEMS), Belgaum, India, pp. 301–305. IEEE. https://doi.org/10.1109/CTEMS.2018.8769175

Buchade A.C. and M.P. Kantipudi , Recent Trends on Brain Tumor Detection Using Hybrid Deep Learning Methods, Revue d'Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, Feb. 2024, doi: 10.18280/ria.380111.

Dimlo, U.M.F. , Sankar, R. , Patil, U.R. , Tomar, V. , Gottumukkala, P. and Gaikwad, P. 2024. Identifying diseased regions on plant leaves and classifying plant leaf diseases with an ELM-GOA based model. In: Proceedings of the 2nd World Conference on Communication & Computing (WCONF), Raipur, India, pp. 1–6. IEEE. https://doi.org/10.1109/WCONF61366.2024.10692012

Gangone, A. , Abraham, A. , Gangone, S. and Bharat Kumar, G.J. 2024b. Malaria prediction using fusion learning with enhanced trust and transparency. In: Proceedings of the 2024 Intelligent Systems and Machine Learning Conference (ISML), *Hyderabad*, India, pp. 491–497. IEEE. https://doi.org/10.1109/ISML60050.2024.11007407

Harakannanavar, S.S. , Rudagi, J.M. , Puranikmath, V.I. , Siddiqua, A. and Pramodhini, R. 2022. Plant leaf disease detection using computer vision and machine learning algorithms. Global Transitions Proc. 3(1): 305–310.

He, K. , Zhang, X. , Ren, S. and Sun, J. 2016. Deep residual learning for image recognition. In *Proc. IEEE Conf. Comput. Vis. Pattern Recognit.* (CVPR), Jun. 2016, pp. 770–778.

Jabbar M.A. , M.P. Kantipudi , A.M. Madureira , M.B.I. Reaz , and S.-L. Peng , Machine learning methods for signal, image and speech processing. 2022. doi: 10.1201/9781003338789.

Jasim, M.A. and Al-Tuwaijari, J.M. 2020. Plant leaf diseases detection and classification using image processing and deep learning techniques. In *Proc. Int. Conf. Comput. Sci. Softw. Eng.* (CSASE), Apr. 2020, pp. 259–265.

Jayaram, M. , Kalpana, G. , Borra, S.R. and Bhavani, B.D. 2023. A brief study on rice diseases recognition and image classification: Fusion deep belief network and S-particle swarm optimization algorithm. International Journal of Electrical and Computer Engineering (IJECE), vol. 13, no. 6, pp. 6302–6311. https://doi.org/10.11591/ijece.v13i6.pp6302-6311

Kantipudi M.P. , S. Kumar , and A.K. Jha , Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, Jan. 2021, doi: 10.1155/2021/2676780.

Li, L. , Zhang, S. and Wang, B. 2021. Plant disease detection and classification by deep learning—A review. IEEE Access 9: 56683–56698.

Li, Z. , Liu, F. , Yang, W. , Peng, S. and Zhou, J. 2022. A survey of convolutional neural networks: Analysis, applications, and prospects. IEEE Trans. Neural Netw. Learn. Syst. 33(12): 6999–7019.

Mehedi, M.H.K. , Hosain, A.K.M.S. , Ahmed, S. , Promita, S.T. , Muna, R.K. , Hasan, M. and Reza, M.T. 2022. Plant leaf disease detection using transfer learning and explainable AI. In *Proc. IEEE 13th Annu. Inf. Technol., Electron. Mobile Commun. Conf. (IEMCON)*, Oct. 2022, pp. 0166–0170.

Mohanty, S.P. , Hughes, D.P. and Salathé, M. 2016. Using deep learning for image-based plant disease detection. Frontiers Plant Sci. 7: 1419.

Nahiduzzaman, M. , Chowdhury, M.E.H. , Salam, A. , Nahid, E. , Ahmed, F. , Al-Emadi, N. , Ayari, M.A. , Khandakar, A. and Haider, J. 2023. Explainable deep learning model for automatic mulberry leaf disease classification. Frontiers Plant Sci. 14, Art. no. 1175515.

Nigar, N. , Jaleel, A. , Islam, S. , Shahzad, M.K. and Affum, E.A. 2023. IoMT meets machine learning: From edge to cloud chronic diseases diagnosis system. J. Healthcare Eng. 2023(1), Art. no. 9995292.

Nigar, N. , Umar, M. , Shahzad, M.K. , Islam, S. and Abalo, D. 2022. A deep learning approach based on explainable artificial intelligence for skin lesion classification. IEEE Access 10: 113715–113725.

O'Shea, K. and Nash, R. 2015. An introduction to convolutional neural networks. *arXiv preprint arXiv* :1511.08458.

Ramesh, S. , Hebbar, R. , Niveditha, M. , Pooja, R. , Shashank, N. and Vinod, P.V. 2018. Plant disease detection using machine learning. In *Proc. Int. Conf. Design Innov. 3Cs Compute Communicate Control (ICDI3C),* Apr. 2018, pp. 41–45.

Ribeiro, M.T. , Singh, S. and Guestrin, C. 2016. 'Why should I trust you?' Explaining the predictions of any classifier. In Proc. 22nd ACM SIGKDD Int. Conf. Knowl. Discovery Data Mining, pp. 1135–1144.

Saini V. , A. Jain , Anurag , and M.V.V.P. Kantipudi , An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023), A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer, 2025. doi: 10.1007/978-3-031-81086-2_18.

Saleem, M.H. , Potgieter, J. and Arif, K.M. 2019. Plant disease detection and classification by deep learning. Plants 8(11): 468.
Sinha, D. and El-Sharkawy, M. 2019. Thin MobileNet: An enhanced MobileNet architecture. In Proc. IEEE 10th Annu. Ubiquitous Comput., *Electron. Mobile Commun. Conf. (UEMCON)*, Oct. 2019, pp. 0280–0285.
Tan, M. and Le, Q. 2019. EfficientNet: Rethinking model scaling for convolutional neural networks. In Proc. Int. Conf. Mach. Learn., pp. 6105–6114.

Vision language model for contextual image understanding and query response

Antol, S. , Agrawal, A. , Lu, J. , Mitchell, M. , Batra, D. , Zitnick, C.L. and Parikh, D. 2015. Visual question answering. Proceedings of the IEEE International Conference on Computer Vision 2015: 2425–2433.
Alayrac, J.B. , Donahue, J. , Luc, P. , Miech, A. , Barr, I. , Hasson, Y. , Lenc, K. , Mensch, A. , Millican, K. , Reynolds, M. et al . 2023. Flamingo: A visual language model for few-shot learning. Advances in Neural Information Processing Systems 35: 23716–23736.
Bao, H. , Wang, W. , Dong, L. , Liu, Q. , Mohammed, O.K. , Aggarwal, K. , Som, S. and Wei, F. 2021. VLMo: Unified vision-language pre-training with mixture-of-modality experts. *arXiv preprint arXiv*:2111.02358.
Chen, X. , Wang, X. , Changpinyo, S. , Piergiovanni, A. , Padlewski, P. , Salz, D. , Goodman, S. , Grycner, A. , Mustafa, B. , Beyer, L. et al . 2022. PaLI: A jointly-scaled multilingual language-image model. *arXiv preprint arXiv*:2209.06794.
Ch, R. , Sowjanya, S. , Batra, I. and Malik, A. , 2025. A Holistic Approach to Detecting and Attributing Deepfake Media Using Advanced Computer Vision and Machine Learning Techniques. In Vulnerabilities Assessment and Risk Management in Cyber Security (pp. 311–328). IGI Global Scientific Publishing.
Devlin, J. , Chang, M.W. , Lee, K. and Toutanova, K. 2018. BERT: Pre-training of deep bidirectional transformers for language understanding. *arXiv preprint arXiv*:1810.04805.
Dosovitskiy, A. , Beyer, L. , Kolesnikov, A. , Weissenborn, D. , Zhai, X. , Unterthiner, T. , Dehghani, M. , Minderer, M. , Heigold, G. and Gelly, S. et al . 2020. An image is worth 16x16 words: Transformers for image recognition at scale. arXiv preprint arXiv:2010.11929.
Radford, A. , Kim, J.W. , Hallacy, C. , Ramesh, A. , Goh, G. , Agarwal, S. , Sastry, G. , Askell, A. , Mishkin, P. , Clark, J. et al . 2021. Learning transferable visual models from natural language supervision. Proceedings of the International Conference on Machine Learning 2021: 8748–8763.
Vaswani, A. , Shazeer, N. , Parmar, N. , Uszkoreit, J. , Jones, L. , Gomez, A.N. , Kaiser, Ł. andPolosukhin, I. 2017. Attention is all you need. Advances in Neural Information Processing Systems 30.
Wang, W. , Bao, H. , Dong, L. , Bjorck, J. , Peng, Z. , Liu, Q. , Aggarwal, K. , Mohammed, O.K. , Singhal, S. and Som, S. et al . 2022. Image as a foreign language: BEiT pretraining for all vision and vision-language tasks. *arXiv preprint arXiv:*2208.10442.

VisionAid: A visual support tool

Arora, A.S. , Nadolskis, L. , Beyeler, M. and others 2024. VisionAI – Shopping Assistance for People with Vision Impairments. Proceedings of ISMAR-Adjunct 2024. doi:10.1109/ismar-adjunct64951.2024.00099
Bale, A.S. , Shruthi, G.R. , Niharika, G. and others 2024. VisuAid: Novel Web Application Utilising Smart Glasses for Low Vision Individuals. ICICNIS 2024. doi:10.1109/icicnis64247.2024.10823342
Chimwaza, L. and Jimu, P. 2024. Vision Aid: Developing an Assistive Mobile Application for Visually Impaired Individuals. International Journal of Advanced Research in Science, Communication and Technology, 13 November. doi:10.48175/ijarsct-22228
Choudhary, S. , Kumar, S. , Gowroju, S. , Gulhane, M. and Lakshmi, R.S. eds., 2024. Genomics at the Nexus of AI, Computer Vision, and Machine Learning. John Wiley & Sons.
Lodato, C. and Ribino, P. 2018. A novel vision-enhancing technology for low-vision impairments. Journal of Medical Systems, 42(11). doi:10.1007/S10916-018-1108-1
Rao, S.V.A. , Kumar, S.V. , Damudi, F.Z. , Nikhil, K. and Nazimuddin, M. , 2023. Facial recognition system using LBPH algorithm by open source computer vision library. Research Advancements and Innovations in Computing, Communications and Information Technologies: ICRAIC2IT, 2796(1), p.120001.
Wang, X. 2025. Vision-assisted applications based on deep learning. Journal of Medical Imaging and Health Informatics. doi:10.1117/12.3055720

A novel deep learning based hybrid approach for pepper leaf diseases detection

Alper, Ö. and Emrah, D. 2021. Bacterial disease detection for pepper plant by utilizing deep features acquired from DarkNet-19 CNN model. DUJE (Dicle University Journal of Engineering): 573–579.

Agranovsky, A.A. 2008. Virus diseases of pepper (Capsicum annuum L.) in Ethiopia. Journal of Phytopathology 138: 89–97.

Afework, Y.K. 2019. Developing bacterial wilt detection model on enset crop using a deep learning approach. Addis Ababa, Ethiopia: Addis Ababa Science and Technology University.

Azanaw, A. and Merkuz, A. 2019. Pepper disease assessment and identification in major growing districts of West Gojam Zone in Northwestern Ethiopia. International Journal of Sustainable Agricultural Research:8–20.

Beka, B. and Gomathinayagam, P. 2021. Response of hot pepper (Capsicum annuum L.) to major fungal diseases under field and greenhouse conditions in Horo Guduru Wollega, Oromia, Ethiopia. African Journal of Agricultural Research: 924–932.

Birhanu, H. , Tiegist, D. and Yigzaw, D. 2017. Morphological characterization of hot pepper (Capsicum annuum L.) land races of Ethiopia for qualitative characters. *International Journal of Research Studies in Science* , Engineering and Technology: 4–9.

Chaitanya, M.K. and Sharma, L.D. , 2024. Pre-trained Bi-LSTM model for automated classification of ventricular arrhythmias using 1-D and 2-D ECG. Bulletin of Electrical Engineering and Informatics, 13(4), pp.2485–2495.

Jana, S. , Rijuvana, B.A. and Selvaganesan, S. 2020. Design and analysis of pepper leaf disease detection using deep belief network. European Journal of Molecular & Clinical Medicine: 1724–1731.

Kaba, G.M. 2019. Characterization of Fusarium species from hot pepper (Capsicum annuum L.) and in vitro antagonistic effect of Trichoderma species. Jimma, Ethiopia: Jimma University.

Kahsay, Y. 2017. Evaluation of hot pepper varieties (Capsicum species) for growth, dry pod yield and quality at M/Lehke District, Tigray, Ethiopia. International Journal of Engineering Development and Research: 144–152.

Khaled, O. and Zo-Alfekar, E. 2022. Hybrid system for image classification using CNN and low image processing. International Journal of Engineering Research & Technology (IJERT): 333–336.

Linigerew, M.S. and Shashi, M. 2021. Ethiopian coffee leaf diseases identification using deep learning features. *Journal of Emerging Technologies and Innovative* Research (JETIR): b498–b5008.

Matta, B.D. and Amarendra, K. 2020. Machine learning based application to detect pepper leaf diseases using HistGradientBoosting classifier with fused HOG and LBP features. *International Journal of Emerging Trends in Engineering Research*: 7371–7376.

Nimona, F. , Girma, A. and Edossa, E. 2018. Agronomic and economic performance of hot pepper (Capsicum annuum L.) in response to blended fertilizer supply at Asossa, Western Ethiopia. International Journal of Plant & Soil Science 26(2): 1–11.

Prakanshu, S. , Kritika, M. , Vibhav, A. , Vivek, K.S. and Pawan, K.P. 2021 . Plant disease detection using convolutional neural network. International Journal of Advanced Research (IJAR): 691–698.

Punam, B. and Pushkar, G. 2021. Plant disease detection using hybrid model based on convolutional autoencoder and convolutional neural network. *Artificial Intelligence in Agriculture*.

Shiferaw, M. and Alemayehu, C. 2014. Assessment of hot pepper (Capsicum species) diseases in Southern Ethiopia. International Journal of Science and Research (IJSR): 91–95.

Temesgen, O. and Sefawdin, B. 2020. Isolation and characterization of wilt-causing pathogens of local growing pepper (Capsicum annuum L.) in Gurage Zone, Ethiopia. International Journal of Agronomy: 1–8.

Thamizharasi, A. , Caroline, M. and Radhakrishnan, N.V. 2016. Detection and assessment of leaf spot disease in black pepper leaf. In: *Proceedings of the 3rd National Conference on Recent Trends in Computer Science and Engineering and Sustainability in Civil Engineering (TECHSYNOD'16)*, 19–21 December 2016. Thiruvananthapuram, Kerala, India: *International Journal of Innovative Research in Science, Engineering and Technology*, pp. 10–21.

Tsehaynesh, T. , Abdi, M. , Hassen, S. and Taye, W. 2021. Aspergillus species and aflatoxin contamination in pepper (Capsicum annuum L.) in West Gojjam, Ethiopia. African Journal of Food, Agriculture, Nutrition and Development.

Vagisha, S. , Amandeep, V. and Neelam, G. 2020. Classification techniques for plant disease detection. International Journal of Recent Technology and Engineering (IJRTE): 5423–5430.

Wasyihun, S. , Yirga, Y. and Girmaw, A. 2023. Automatic detection and classification of mango disease using convolutional neural network and histogram oriented gradients. ResearchSquare: 1–15.

Yimeru, A.K. 2020. Automatic coffee disease and pest damage identification. Addis Ababa, Ethiopia: Addis Ababa University.

Deep learning for hate-speech detection in Afaan Oromo audio and video

Abro, S. , Shaikh, S. , Khan, S. , Mujtaba, G. and Khand, Z. (2020). Automatic hate speech detection using machine learning: A comparative study. Machine Learning.

Alrehili, A. (2019). Automatic hate speech detection on social media: A brief survey. In: 2019 IEEE/ACS 16th International Conference on Computer Systems and Applications (AICCSA), 1–6. IEEE.

Ammar, A. and Rebeh, I. (2023). Hate-speech prediction on social media. SN Computer Science, 4(3): 229.

Bawoke, E. (2020). Amharic text hate-speech detection on social media using deep learning approach. Dissertation.

Bahre, W. (2022). Hate-speech detection from Facebook social media posts and comments in Tigrigna language. Master's Thesis, St. Mary's University.

Bernstein, L. (1993). Get the design right. IEEE Software, 10(5): 61–63.

Bhandary, U. (2019). Detection of hate-speech in videos using machine learning. Master's Thesis, San Jose State University, San Jose.

Chaitanya, M.K. and Sharma, L.D. , (2024). Pre-trained Bi-LSTM model for automated classification of ventricular arrhythmias using 1-D and 2-D ECG. Bulletin of Electrical Engineering and Informatics, 13(4), pp.2485–2495.

Faris, H. (2020). Hate-speech detection using word embedding and deep learning in the Arabic language context. In: Proceedings of the International Conference on Pattern Recognition Applications and Methods (ICPRAM), 453–460.

FDRE . (2020). Hate Speech and Disinformation Prevention and Suppression Proclamation. 23 March 2020.

Jayaram, M. , Kalpana, G. , Borra, S.R. and Bhavani, B.D. , (2023). A brief study on rice diseases recognition and image classification: Fusion deep belief network and S-particle swarm optimization algorithm. Int. J. Electr. Comput. Eng.(IJECE), 13, pp.6302–6311.

Kanessa, L.G. and Tulu, S.G. (2021). Automatic hate and offensive speech detection framework from social media: The case of Afaan Oromoo language. In: 2021 International Conference on Information and Communication Technology for Development for Africa (ICT4DA), 42–47.

Kenenisa, Y. and Melak, T. (2019). Hate-speech detection in Amharic language social media using machine learning techniques. Adama University, Adama.

Nayel, H.A. and L, S.H. (2019). A machine learning framework for hate-speech and offensive language detection. In: FIRE (Working Notes), DEEP at HASOC2019, 336–343.

StatCounter . (2023). Social media stats/all/Ethiopia. GlobalStatus. [Online]. Available at: https://gs.statcounter.com.

Teshome, M. and Michael, W. (2022). Afaan Oromo hate speech detection and classification on social media. In: Proceedings of the 13th Conference on Language Resources and Evaluation, 6612–6619.

Design and performance evaluation of a MicrostripPhased array antenna for mmWave applications approach

Abdulmajid, M.F. (2021). Study and analysis of rectangular microstrip patch antenna at 28 GHz for 5G applications. *WSEAS Transactions on Communications*, 20: 6–11. https://doi.org/10.37394/23204.2021.20.2

Chaitanya, M.K. and Harimanikyam, R. , (2013). Design of 5-Element YAGI-UDA Antenna for Radar Applications. *International Journal of Applied Sciences, Engineering and Management*.

Khabba, A. , Ibnyaich, S. and Hassani, M.M. (2019). Beam-steering millimeter-wave antenna array for fifth generation smartphone applications. In: *2019 International Conference of Computer Science and Renewable Energies (ICCSRE)*. IEEE, pp. 1–5. https://doi.org/10.1109/icc-sre.2019.8807447

Khalaf, T.A. and Yetkin, G.Ö. (2025). 28 GHz high-gain slotted array antenna with beam steering capability for 5G mmWave applications. *Defence Science Journal*, 75(2): 215–223. https://doi.org/10.14429/dsj.20405

Mashade, M.B.E. and Hegazy, E.A. (2018). Design and analysis of 28 GHz rectangular microstrip patch array antenna. *WSEAS Transactions on Communications*, 17: n. pag.

Mungur, D. and Duraikannan, S. (2018). Microstrip patch antenna at 28 GHz for 5G applications. *Journal of Science Technology Engineering and Management – Advanced Research & Innovation*, 1(1): 20–22.

Ojaroudiparchin, N. , Shen, M. and Pedersen, G.F. (2015). A 28 GHz FR-4 compatible phased array antenna for 5G mobile phone applications. In: *2015 International Symposium on Antennas and Propagation (ISAP)*, Hobart, TAS, Australia. IEEE, pp. 1–4.

Raviteja, G.V. (2019). 2 × 2 millimeter-wave microstrip antenna array for 5G applications. *European Journal of Engineering and Technology Research*, 4(10): 55–58. https://doi.org/10.24018/ejeng.2019.4.10.1581

Rama Krishna, C. , Battula, A. , Majji, B. , Akumalla, S. and Saxena, C. , (2024, June). 5G MIMO Antenna Design for Bandwidth Enhancement Using Split Ring Resonator. In *International Conference on Soft Computing and Signal Processing* (pp. 1–15). Singapore: Springer Nature Singapore.

Yezhen, L. , Yongli, R. , Fan, Y. , Shenheng, X. and Jiannian, Z. (2020). A novel 28 GHz phased array antenna for 5G mobile communications. *ZTE Communications*, 18(3): 20–25. https://doi.org/10.12142/ztecom.202003004

AI for predicting human behaviors in social media

Aarti , Gowroju, S. , Karling, S. and Vishnoi, S. (2025). Utilising machine learning to forecast staff attrition. In: Mzili, T., Arya, A., Pamucar, D. and Shaheen, M. (eds) *Optimization, Machine Learning, and Fuzzy Logic: Theory, Algorithms, and Applications*. IGI Global Scientific Publishing, pp. 403–426. https://doi.org/10.4018/979-8-3693-7352-1.ch017

Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, *Scientific Reports*, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.

Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 189–204.

Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. *Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy*, July 23, 2025, 1–37. https://doi.org/10.1115/1.4069225.

Buchade A.C. and Kantipudi M.P. (2024). Recent Trends on Brain Tumor Detection Using Hybrid Deep Learning Methods, *Revue d'Intelligence Artificielle*, vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.

Ch, R. , Kavitha, D. , Sowjanya, S. , Pallavi, S. and Ramesh, V. (2025). A comparative study of traditional machine learning models and the KNN-KFSC method for optimizing anomaly detection in VANETs. *International Journal of Systematic Innovation* 9(2): 37–46.

Choudhary S. , C.H. Kandikattu , S. Kumar , M.P. Kantipudi and M. Kumar , (2024). Enhancing cybersecurity through combined convolutional neural network-gated recurrent unit approach for distributed denial of service attack detection, 2024 *1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR)*, Muscat, Oman, pp. 1-6, doi: 10.1109/ICIESTR60916.2024.10798189.

Darmon, M. , Bourmaud, A. , Georges, Q. , Soares, M. , Jeon, K. , Oeyen, S. , ... and Azoulay, E. (2019). Changes in critically ill cancer patients' short-term outcome over the last decades: results of systematic review with meta-analysis on individual data. *Intensive Care Medicine* 45: 977–987.

Ding, W. , Baumdicker, F. and Neher, R.A. (2018). panX: pan-genome analysis and exploration. *Nucleic Acids Research* 46(1): e5–e5.

Gangone, A. , Bharat Kumar, G.J. and Swapna, M. (2024). Innovative rumor detection on social media text: a comprehensive study of dual co-attention ensemble-based voting approach. In: *International Conference on Recent Trends in Machine Learning*, IoT, Smart Cities & Applications. Singapore: Springer Nature Singapore, 205–215.

Gangone, A. , Bharat Kumar, G.J. and Swapna, M. (2025a). Innovative rumor detection on social media text: A comprehensive study of dual co-attention ensemble-based voting approach. In: Gunjan, V.K. and Zurada, J.M. (eds) *Proceedings of the 5th International Conference on Recent Trends in Machine Learning*, IoT, Smart Cities and Applications (ICMISC 2024). Lecture Notes in Networks and Systems, vol. 1181. Singapore: Springer. https://doi.org/10.1007/978-981-97-8861-3_18

Gangone, A. , Bharat Kumar, G.J. , Gangone, S. and Moges, T. (2024a). Innovative rumor detection on social media text: A comprehensive study of hybrid attention-based voting approach. In: *Proceedings of the 2024 Intelligent Systems and Machine Learning Conference (ISML)*, Hyderabad, India, pp. 485–490. IEEE. https://doi.org/10.1109/ISML60050.2024.11007293

Gowroju, S. , Kumar, S. and Choudhary, S. (2024). Natural language processing-driven voice recognition system for enhancing desktop assistant interactions. In: *Proceedings of the 2024 4th International Conference on Contemporary Computing and Informatics (IC3I),* pp. 1136–1141. IEEE. https://doi.org/10.1109/IC3I61595.2024.10829162

Guntuku, S.C. , Schneider, R. , Pelullo, A. , Young, J. , Wong, V. , Ungar, L. and Merchant, R. (2019). Studying expressions of loneliness in individuals using Twitter: An observational study. *BMJ Open* 9(11):

e030355.
Hossain, R. (2024). Adopting Industry 4.0: a strategic solution for transforming Smart Bangladesh: prospective connections, opportunities, and challenges. *Pakistan Journal of Life and Social Sciences* 22(1): 3304–3323.
Jabbar M.A. , Kantipudi M.P. , Madureira A.M. , Reaz M.B.I. , and Peng S.-L. (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.
Kantipudi M.P. , Kumar S. , and Jha A.K. (2021). Scene text recognition based on bidirectional LSTM and deep neural network, *Computational Intelligence and Neuroscience*, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.
Karling, S. and Swathi, A. (2025). Lung cancer detection using machine learning. In: Optimization, Machine Learning, and Fuzzy Logic: Theory, Algorithms, and Applications. *IGI Global Scientific Publishing*, 161–1
Kumar, S. , Haq, M. , Jain, A. , Jason, C.A. , Moparthi, N.R. *et al.* 2023. Multilayer neural network-based speech emotion recognition for smart assistance. Computers, Materials & Continua, 74(1), pp.1523–1540. https://doi.org/10.32604/cmc.2023.02863168.
Kosinski, M. , Stillwell, D. and Graepel, T. (2013). Private traits and attributes are predictable from digital records of human behavior. Proceedings of the National Academy of Sciences 110(15): 5802–5805.
Li, M.J. , Li, S.T. , Yang, A.C. , Huang, A.Y. and Yang, S.J. (2024). Trustworthy and explainable AI for learning analytics. In: LAK Workshops, 3–12.
Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI, EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, doi: 10.4108/eetpht.10.5544.
Rocha, K.A. , Hur, R. , Kalogera, V. , Gossage, S. , Sun, M. , Doctor, Z. , ... and Zapartas, E. (2025). Mass transfer in eccentric orbits with self-consistent stellar evolution. The Astrophysical Journal 983(1): 39.
Saini V. , A. Jain , Anurag , and M.V.V.P. Kantipudi , (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in *Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023),* A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer, 2025. doi: 10.1007/978-3-031-81086-2_18.
Saiyed N. and Kantipudi M.V.V. (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, *International Journal of Computing and Digital Systems*, vol. 17, no. 1, pp. 1–13.
Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 1–10.
Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (2025). Precision biochar yield forecasting employing random forest and XGBoost with taylor diagram visualization. *Scientific Reports* 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.
Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. *Journal Européen Des Systèmes Automatisés* 58, no. 5: 983–90. https://doi.org/10.18280/jesa.580512.
Wang, Y. , Wang, B. , Zhao, Y. , Zhao, D. , Jin, X. , Zhang, J. , ... and Hou, Y. (2024). Emotion recognition in conversation via dynamic personality. In: Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024), 5711–5722.
Zaman, M.U. , Almutairi, N.S. , Abdulrahman Alnashwan, M. , Albogami, S.M. , Alkhammash, N.M. and Alam, M.K. (2021). Pattern of mandibular third molar impaction in nonsyndromic 17760 patients: a retrospective study among Saudi population in central region, Saudi Arabia. BioMed Research International 2021(1): 1880750.

AI driven strengthening digital payments with intelligent analysis

Anand, N. , Uppalapati, S. , Padamurthy, A. , Kishore Kumar, P. , Kumar, G.N. , and Vemanaboina, H. (2025). Building Enhanced Neural Network Models to Predict Energy Storage Density of Composite Materials for Low-Temperature Thermochemical Energy Storage. *Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy*, 1(6). https://doi.org/10.1115/1.4069225
Gopal, P.M. , Kavimani, V. , Sudhagar, S. , Barik, D. , Paramasivam, P. , and Vemanaboina, H. (2024). Enhancing WEDM performance on Mg/FeCoCrNiMn HEA composites through ANN and entropy integrated COCOSO optimization. *AIP Advances*, 14(9). https://doi.org/10.1063/5.0226558

Kantheti, P.R. and Bvuma, S. (2024a). AI and machine learning in fraud detection: Securing digital payments and economic stability. *International Journal of Scientific Research in Science and Technology*, 16 June. doi: 10.32628/ijsrst52310291.

Kantheti, P.R. and Bvuma, S. (2024b). Real-time payment systems for boosting economic productivity. *International Journal of Scientific Research in Science, Engineering and Technology*, 31 August. doi: 10.32628/ijsrst24114169.

Komarraju, A.K. , Ramprasad, M.V.S. and Rao, M.B. (2024). Enhancing digital payment security with biometric authentication and AI: A big data approach. *International Journal of Engineering and Computer Science*, 13(4). doi: 10.18535/ijecs/v13i04.4811.

Vikram M , Uppalapati, S. , Battula, A. , Kasturi, S.B. , Vemanaboina, H. , and Kumar, S. (2025). Virtual Prédiction of Residual Stresses in Laser Welding Process Using Machine Learning Technique an Industry 4.0 Approach. *Journal Européen Des Systèmes Automatisés*, 58(5), 983–990. https://doi.org/10.18280/jesa.580512

Mohan, K.M. , Rao, P.S. , PrudhviRaj, S. and Sai, C.N. , (2024). Intelligent and Secured Cloud Service Management Using Smart Data Hashing Algorithm.

Ramachandran, K. (2024). Exploring the role of artificial intelligence in personalized payment recommendations. *International Journal of Finance*, 20 May. doi: 10.47941/ijf.1913.

Rani, S. and Mittal, A. (2023). Securing digital payments: A comprehensive analysis of AI-driven fraud detection with real-time transaction monitoring and anomaly detection. *Proceedings of the IEEE* IC3I 2023, 14 September. doi: 10.1109/ic3i59117.2023.10397958.

Shah, C.V. (2024). Securing digital transactions: The role of AI, big data, and biometric authentication in modern payment systems. *GRD Journals for Engineering*, 9(10), 1 June. doi: 10.70179/grdjev09i100009.

Sharma, P. (2023b). AI-driven payment gateways: Spotting fraud before it happens—Securing your credit card without you knowing. *International Journal for Multidisciplinary Research*, 5(4), 9 August. doi: 10.36948/ijfmr.2023.v05i04.35254.

Sharma, P.M. (2023a). AI payment gateways: The silent guards of your transactions. *International Journal for Multidisciplinary Research*, 5(3), 3 May. doi: 10.36948/ijfmr.2023.v05i03.23370.

Sheoran, D. (2024). An analysis of the comparative performance of AI tools and techniques in effective fraud detection across digital payment ecosystems. *International Journal of Professional Studies*, 17(1), 1 January. doi: 10.37648/ijps.v17i01.023.

Uppalapati, S. , Paramasivam, P. , Kilari, N. , Chohan, J.S. , Kanti, P.K. , Vemanaboina, H. , Dabelo, L.H. , and Gupta, R. (2025). Precision biochar yield forecasting employing random forest and XGBoost with Taylor diagram visualization. *Scientific Reports*, 15(1). https://doi.org/10.1038/s41598-025-91450-w

Xu, Q. , Xu, L. , Jiang, G. and others . (2024). Artificial intelligence in risk protection for financial payment systems. Preprints, 15 July. doi: 10.20944/preprints202407.1098.v1.

Verifying medical device ownership via QR code with Blockchain technology

Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 189–204

Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (July 23, 2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. *Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy*, July 23, 2025, 1–37. https://doi.org/10.1115/1.4069225.

Bharat Kumar, G.J. (2018b). Internet of Things (IoT) and cloud computing in hybrid organisations using monitoring systems. In: *Proceedings of the 3rd International Conference on Contemporary Computing and Informatics (IC3I)*, Gurgaon, India, pp. 348–351. IEEE. https://doi.org/10.1109/IC3I44769.2018.9007302

Bhukya, S. , Devi, L.N. and Rao, A.N. (2025). Enhanced micro-expression recognition through graph convolutional networks and metric learning. *Journal of Shanghai Jiaotong University (Science)*. https://doi.org/10.1007/s12204-025-2821-9

Bhusari, A. , Vishwakarma, R. , Bhusari, D. , Shinde, S. et al. (2023). Government fund allocation tracking system over blockchain. *International Journal of Science Technology and Management (IJSTM) [online]*. Available at: http://www.ijstm.com/images/short_pdf/1696153596_T5084.pdf.

Casinno, F. , Dasaklis, T.K. and Patsakis, C. (2019). A comprehensive review of literature on blockchain-enhanced applications: Current status, classification, unsolved issues. *Telematics and Informatics*, 36, pp.55–81.

Chauhan, A. , Savner, G. , Venkatesh, P. , Patil, V. and Wu, W. et al. (2020). A blockchain-based tracking system. IEEE Access [online]. Available at: https://ieeexplore.ieee.org/abstract/document/9183541.

Chhane, M.L. (2017). Blockchain & IoT based smart waste management system. M.S. thesis, Department of Information Technology, ITMO University, Saint Petersburg, Russia.

Choudhary S. , C.H. Kandikattu , S. Kumar , M.P. Kantipudi and M. Kumar , (2024). Enhancing Cybersecurity Through Combined Convolutional Neural Network-Gated Recurrent Unit Approach for Distributed Denial of Service Attack Detection, *2024 1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR)*, Muscat, Oman, pp. 1-6, doi: 10.1109/ICIESTR60916.2024. 10798189.

Fereira, J. and Marttins, A. (2018). Building a community of users for open market energy. *Energies*, 11(9), pp.41–71.

Gupta, N. and Beddi, P. (2018). E-waste management using blockchain-based smart contracts. In: *Proc. International Conference on Advanced Computing, Communication and Informatics (ICACCI)*. pp.915–921.

Jain, Ayushi , Vaibhav Saini , Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing autonomous vehicle intelligence with cutting-edge spatial crowdsourcing framework. In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120-133. Cham: Springer Nature Switzerland.

G.V.S., Petikam, S. and Sharma, M.K. (2025). Blockchain for machine learning: Security and trust in data sharing. In: *Proceedings of the 2025 International Conference on Pervasive Computational Technologies (ICPCT)*, Greater Noida, India, pp. 793–797. IEEE. https://doi.org/10.1109/ICPCT64145.2025.10941369

Kumar, P.P. , Sai, K.S. , Soniya, B. , Koutil, U. , Sania, A. and Sagar, K. (2023). Advanced smart shopping cart with integration of AI and IoT. In: *Proceedings of the 2nd International Conference on Edge Computing and Applications (ICECAA)*, Namakkal, India, pp. 1348–1353. IEEE. https://doi.org/10.1109/ICECAA58104.2023.10212323

Liu, H. and Chung, Y.F. (2017). Secure user authentication scheme for wireless healthcare sensor networks. *Computers and Electrical Engineering*, pp.67–80.

Mohanta, B. , Jena, D. and Panda, S. (2019). Blockchain technology: A survey on applications and security privacy challenges. *International Journal of Computer Applications*, [online].

Mohite, A. and Acharya, A. et al. (2019). Blockchain for government fund tracking using Hyperledger. *IEEE Access [online]*. Available at: https://ieeexplore.ieee.org/document/8769200.

Orlandini, T. , Sores, T. , Sousa, T. and Pinson, P. (2019). Coordinating consumer-centric market and grid operation on distribution grid. In: *Proc. 16th International Conference on European Energy Market (EEM)*. pp.1112–1123.

Parag, Y. and Sovacool, B.K. (2016). Electricity market design for the prosumer era. *Nature Energy*.

Peddro, H.P.B. , Aquino, E.P.L. , Pinto, D.B. , Diass, B.H.Q. (2022). An overview on blockchain-based consumer-centric electricity markets. *Renewable and Sustainable Energy Reviews*, 87, pp.221–235.

Phien, T. , Vo, L. , Anh, T. , Tuan, S. and Son, S. (2021). A secure IoT platform with brokerless and micro-service architecture. *International Journal of Advanced Computer Science and Applications (IJACSA)*, 12, pp.7–20.

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI, *EAI Endorsed Transactions on Pervasive Health and Technology*, vol. 10, Mar. 2024, doi: 10.4108/eetpht.10.5544.

Rotondi, G. and Vertticale, F. (2021). A privacy-friendly gaming framework in smart electricity and water grids. *IEEE Access*, 5, pp.14221–14233.

Sembeta, C. , Embabo, A. , Gangone, S. and Bharat Kumar, G.J. (2024). Aspect based sentiment analysis for hotel services in Afaan Oromo text using deep learning. In: Kumar, A. and Mozar, S. (eds) *Proceedings of the 6th International Conference on Communications and Cyber Physical Engineering (ICCCE 2024)*. Lecture Notes in Electrical Engineering, vol. 1096. Singapore: Springer. https://doi.org/10.1007/978-981-99-7137-4_66

Silva, R.B.D. and Matos, C.A.D. (2019). Critical success factors of a drug traceability system for creating value in a pharmaceutical supply chain (PSC). *International Journal of Environmental Research and Public Health*, 16(11), p.1972.

Sonawane, N. , Gupta, P. , Laksh, C. and Gururaja, H.S. et al. (2024). Blockchain solution for enhancing risk management and transparency in loan disbursements. *IEEE Access* [online]. Available at: https://ieeexplore.ieee.org/document/10392836.

Yavas, A. and Kim, D.S. (1996). Matching of buyers and sellers by brokers: A comparison of alternative commission structures. *Real Estate Economics*, pp.3410–3421.

PublicEduChain: A framework for sharing Student-owned educational data on public Blockchain network

Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, *Scientific Reports*, vol. 15, p. 17311, doi: 10.1038/s41598-025-01823-4.

Akkepalli, S. and Sagar, K. (2025). Copula entropy regularization transformer with C2 variational autoencoder and fine-tuned hybrid DL model for network intrusion detection. *Telematics and Informatics Reports* 17: 100182. https://doi.org/10.1016/j.teler.2024.100182.

Aluvalu R. , Asha V. , Anandhi R.J. , Prasad Kantipudi M.V.V. , Bali J. , and Bhanja M. , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 189–204.

Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage." *Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy*, July 23, 2025, 1–37. https://doi.org/10.1115/1.4069225.

Ayub Khan, A. , Laghari, A.A. , Shaikh, A.A. , Bourouis, S. , Mamlouk, A.M. and Alshazly, H. (2021). Educational blockchain: A secure degree attestation and verification traceability architecture for higher education commission. *Applied Sciences* 11(22): 10917.

Bharat Kumar, G.J. (2018b). Internet of Things (IOT) and cloud computing in hybrid organisations using monitoring systems. 2018 *3rd International Conference on Contemporary Computing and Informatics (IC3I)*, Gurgaon, India, pp. 348–351. doi: 10.1109/IC3I44769.2018.9007302.

Choi, M. , Kiran, S.R. , Oh, S.-C. and Kwon, O.-Y. (2019). Blockchain-based badge award with existence proof. *Applied Sciences* 9(12): 2473.

Choudhary S. , Kandikattu C.H. , Kumar S. , Kantipudi M.P. and Kumar M. (2024). "Enhancing cybersecurity through combined convolutional neural network-gated recurrent unit approach for distributed denial of service attack detection," *2024 1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR)*, Muscat, Oman, pp. 1-6, doi: 10.1109/ICIESTR60916.2024.10798189.

Erasmus+ (2023). Opportunities for individuals: Erasmus Mundus joint masters. [Online]. Available: https://erasmus-plus.ec.europa.eu/opportunities/opportunities-for-individuals/students/erasmus-mundus-joint-masters (Accessed: 5 September 2023).

Gangone, A. , Bharat Kumar, G.J. and Gangone, S. (2024). innovative design of a solar-powered wireless soil moisture sensor for maximizing the efficiency of IoT-Based Systems. In: Gunjan, V.K. and Zurada, J.M. (eds) *Proceedings of 4th International Conference on Recent Trends in Machine Learning, IoT, Smart Cities and Applications*. ICMISC 2023. Lecture Notes in Networks and Systems, vol 873. Singapore: Springer. https://doi.org/10.1007/978-981-99-9442-7_29

Germany DAAD (2023). Study and research in Germany. Available: https://www.daad.de/en/study-and-research-in-germany/ (Accessed: 5 September 2023).

Gowroju, S. , Choudhary, S. , Jyothi, G. , Sabitha, B. , Kumar, B.B. and Srilakshmi, R. (2024). Phishing Websites Classification using Extreme Learning Machine. *2024 International Conference on Communication, Computer Sciences and Engineering (IC3SE)*, Gautam Buddha Nagar, India, pp. 466-471. doi: 10.1109/IC3SE62002.2024.10592901.

Holotescu, V. , Vasiu, R. , Ternauciuc, A. , Holotescu, C. and Andone, D. (2023). Building a decentralized education ecosystem: Politehnica University of Timisoara's pioneering blockchain initiatives.

Jain, Ayushi , Vaibhav Saini , Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). "Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework." In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120–133. Cham: Springer Nature Switzerland.

Kiran, G.R. , Maisaiah, N. , Divya, T.V. , Reddy, G.V.S. , Petikam, S. and Sharma, M.K. (2025). Blockchain for Machine Learning: Security and Trust in Data Sharing. *2025 International Conference on Pervasive Computational Technologies (ICPCT)*, Greater Noida, India, pp. 793–797. doi: 10.1109/ICPCT64145.2025.10941369.

Metamask Statistics (2023). Detailed Metamask statistics 2023. [Online]. Available: https://earthweb.com/metamask-statistics/#Detailed_Metamask_Statistics_2023 (Accessed: 16 September 2023).

MyWish (2023). *Create contracts.* Available: https://contracts.mywish.io/create (Accessed: 16 September 2023).

Platonava, A. and Cashin, M. (2023). Blockchain applications in the European higher education arena. In *Konferenzband zum Scientific Track der Blockchain Autumn School* 2023 (No. 2): 26–34. Hochschule Mittweida.

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). “Enhancing health product traceability on the blockchain: A novel approach for supply chain management inspection to AI,” *EAI Endorsed Transactions on Pervasive Health and Technology*, vol. 10, doi: 10.4108/eetpht.10.5544.

Prieto, L.P. , Pishtari, G. , Dimitriadis, Y. , Rodríguez Triana, M.J. , Ley, T. and Odriozola González, P. (2023). Single-case learning analytics: Feasibility of a human-centered analytics approach to support doctoral education.

Rataj, M. and Berezovska, I. (2023). Addressing challenges with Ukrainian refugees through sustainable integration: Response of the educational community in Poland. *Journal of Further and Higher Education* 47(9): 1221–1227.

Saiyed N. and Kantipudi M.V.V. (2024). “Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations,” *International Journal of Computing and Digital Systems*, vol. 17, no. 1, pp. 1–13.

Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). “A machine learning-based optimization algorithm for wearable wireless sensor networks,” *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 1–10.

Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (2025). “Precision Biochar Yield Forecasting Employing Random Forest and XGBoost with Taylor Diagram Visualization.” *Scientific Reports* 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.

Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). “Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach.” *Journal Européen Des Systèmes Automatisés* 58, no. 5 (May 31, 2025): 983–90. https://doi.org/10.18280/jesa.580512.

WorkBounty: A blockchain based Web3 platform for freelancing ecosystems

Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.

Al-Bassam, M. , et al . (2020). Secure session management in Web3 applications. ACM Transactions on Internet Technology 20(2): 1–18.

Alharby, M. and van Moorsel, A. (2017). Blockchain-based smart contracts: A systematic mapping study. Computer Science Review 28: 32–45.

Allam, B. , Nabi, S.A. , Manda, S. and Shareef, S.K. (2023). A provable semiology seeking scheme over encoding data in public cloud. *AIP Conference Proceedings*, vol. 2492, 030074. https://doi.org/10.1063/5.0113207

Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 189–204.

Anand, Nemalikanti , Sudhakar Uppalapati, Ankammarao Padamurthy , Panchagnula Kishore Kumar, G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building Enhanced Neural Network Models to Predict Energy Storage Density of Composite Materials for Low-Temperature Thermochemical Energy Storage. Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy, 1–37. https://doi.org/10.1115/1.4069225.

Antonopoulos, A.M. (2017). Mastering Bitcoin: Programming the open blockchain (2nd ed.). Sebastopol, CA: O’Reilly Media.

Bahga, A. and Madisetti, V.K. (2016). Blockchain platform for industrial Internet of Things. Journal of Software Engineering and Applications 9(10): 533–546.

Benet, J. (2014). IPFS - Content addressed, versioned, peer-to-peer file system. arXiv preprint arXiv:1407.3561.

Buchade A.C. and M.P. Kantipudi , (Feb. 2024). Recent Trends on Brain Tumor Detection Using Hybrid Deep Learning Methods, Revue d’Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.

Buterin, V. (2014). A next-generation smart contract and decentralized application platform [Ethereum White Paper].

Choudhary S. , Kandikattu C.H. , Kumar S. , Kantipudi M.P. and Kumar M. (2024). Enhancing cybersecurity through combined convolutional neural network-gated recurrent unit approach for distributed denial of service attack detection, *2024 1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR),* Muscat, Oman, pp. 1–6, doi: 10.1109/ICIESTR60916.2024.10798189.

Christidis, K. and Devetsikiotis, M. (2016). Blockchains and smart contracts for the Internet of Things. IEEE Access 4: 2292–2303.

Deshmukh, P. , Kalwaghe, S. , Appa, A. and Pawar, A. (2020). Decentralized freelancing using Ethereum blockchain. In *Proceedings of the International Conference on Communication and Signal Processing (ICCSP)*, Chennai, India: IEEE, pp. 881–883.

Dimlo, U.M.F. , Rupesh, V. and Raju, Y. (2024). The dynamics of natural language processing and text mining under emerging artificial intelligence techniques. International Journal of System Assurance Engineering and Management, vol. 15, pp. 4512–4526. https://doi.org/10.1007/s13198-024-02468-8

Freelancers Union and Upwork . (2021). Freelancing in America: 2021 report.

Gangone, A. , Abraham, A. , Gangone, S. and Bharat Kumar, G.J. (2024b). Malaria prediction using fusion learning with enhanced trust and transparency. *2024 Intelligent Systems and Machine Learning Conference (ISML)*, Hyderabad, India, pp. 491–497. doi: 10.1109/ISML60050.2024.11007407

Hoffman, R. , et al . (2018). TrustChain: A decentralized reputation system for digital marketplaces. IEEE Transactions on Dependable and Secure Computing 15(5): 789–802.

Izumi, C. and Hariguna, T. (2024). In-depth analysis of Web3 job market: Insights from blockchain and cryptocurrency employment landscape. International Journal of Research in Metaverse 1(1): 40–58.

Jabbar M.A. , M.P. Kantipudi , A.M. Madureira , M.B.I. Reaz , and S.-L. Peng , (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.

Jain, Ayushi , Vaibhav Saini , Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing autonomous vehicle intelligence with cutting-edge spatial crowdsourcing framework. In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120–133. Cham: Springer Nature Switzerland.

Kantipudi M.P. , S. Kumar , and A.K. Jha , (Jan. 2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.

Kshetri, N. (2017). Blockchain's roles in strengthening cybersecurity and protecting privacy . Telecommunications Policy 41(10): 1027–1038.

Mougayar, W. (2016). The business blockchain: Promise, practice, and application of the next Internet technology. Hoboken, NJ: Wiley.

Nagaraj, P. , Prasad, T. , Nagesh, O. and Kallepalli, K. (2024). Hybrid method for discovering DDoS attack. In: Proceedings of the Conference (if applicable). Springer. https://doi.org/10.1007/978-981-97-4727-6_14

Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system.

Narayanan, A. , Bonneau, J. , Felten, E. , Miller, A. and Goldfeder, S. (2016). Bitcoin and cryptocurrency technologies: A comprehensive introduction. Princeton, NJ: Princeton University Press.

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). Enhancing health product traceability on the blockchain: A novel approach for supply chain management inspection to AI, EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, doi: 10.4108/eetpht.10.5544.

Saini V. , A. Jain , Anurag , and M.V.V.P. Kantipudi , (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023), A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer. doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and M.V.V. Kantipudi , (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13.

Sembeta, C. , Embabo, A. , Gangone, S. and Bharat Kumar, G.J. (2024). Aspect Based Sentiment Analysis for Hotel Services in Afaan Oromo Text Using Deep Learning. In: Kumar, A. and Mozar, S. (eds) *Proceedings of the 6th International Conference on Communications and Cyber Physical Engineering*. ICCCE 2024. Lecture Notes in Electrical Engineering, vol 1096. Singapore: Springer. https://doi.org/10.1007/978-981-99-7137-4_66

Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 1–10.

Swan, M. (2015). Blockchain: Blueprint for a new economy. Sebastopol, CA: O'Reilly Media.

Tapscott, D. and Tapscott, A. (2016). Blockchain revolution: How the technology behind Bitcoin is changing money, business, and the world. New York, NY: Penguin.

Uppalapati, Sudhakar , Prabhu Paramasivam, Naveen Kilari , Jasgurpreet Singh Chohan, Praveen Kumar Kanti , Harinadh Vemanaboina, Leliso Hobicho Dabelo , and Rupesh Gupta . (February 27, 2025). Precision biochar yield forecasting employing random forest and XGBoost with taylor diagram visualization. Scientific Reports 15, no. 1 . https://doi.org/10.1038/s41598-025-91450-w.

Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (May 31, 2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 Approach. Journal Européen Des Systèmes Automatisés 58, no. 5 : 983–990. https://doi.org/10.18280/jesa.580512.

Zhang, L. and Jacobsen, H.A. (2018). Decentralized data storage for transparent marketplaces. IEEE Transactions on Services Computing 11(4): 678–690.

Zyskind, G. , Nathan, O. and Pentland, A. 2015. Decentralizing privacy: Using blockchain to protect personal data. In *Proceedings of the IEEE Security and Privacy Workshops (SPW)*, San Jose, CA: IEEE, pp. 180–184.

Decentralized voting system using ethereum blockchain

Barnes, A. , et al . (2020). Blockchain technology applied to electronic voting: Literature review.

Chaum, D. (1981). Untraceable electronic mail, return addresses, and digital pseudonyms. Communications of the ACM, 24(2): 84–90.

Gangone, A. , Bharat Kumar, G.J. and Swapna, M. , (2024), March. innovative rumor detection on social media text: A comprehensive study of dual co-attention ensemble based voting approach. *In* International Conference on Recent Trends in Machine Learning, IOT, Smart Cities & Applications (pp. 205–215). Singapore: Springer Nature Singapore.

Gritzalis, D. (2002). Principles and requirements for a secure e-voting system. Computers & Security, 21(6): 539–556.

Li, X. , et al . (2020). A survey on the security of blockchain systems. Future Generation Computer Systems, 108: 841–853.

Specter, M. , et al . (2020). Evaluating the security of blockchain-based voting systems.

Upadhyay, S. , Kumar, M. , Kumar, A. , Karnati, R. , Mahommad, G.B. , Althubiti, S.A. , Alenezi, F. and Polat, K. , (2022). Feature extraction approach for speaker verification to support healthcare system using blockchain security for data privacy. Computational and Mathematical Methods in Medicine, 2022(1), p.8717263.

Xu, J. , et al . (2019). Scaling blockchain applications: Review and implications. IEEE Access, 7: 165793–165813.

Yavuz, E. , et al . (2018). Towards secure e-voting using Ethereum blockchain. In: 2018 International Conference on Computer Science and Engineering (UBMK). IEEE, pp. 825–830.

Zhang, R. & Preneel, B. (2020). Consensus mechanisms for blockchain. Computer, 53(9): 124–131.

Zyskind, G. , Nathan, O. and Pentland, A. (2015). Decentralizing privacy: Using blockchain to protect personal data. In: 2015 IEEE Security and Privacy Workshops. IEEE, pp. 180–184.

IoT based medicine intake alarm system

Aluvalu R. , V. Asha , Anandhi R.J. , Prasad Kantipudi M.V.V. , J. Bali , and M. Bhanja M., (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, *International Journal of Computing and Digital Systems,* vol. 16, no. 1, pp. 189–204, 2024.

Azlan, M.S. , Rahman, M.A. and Rahman, M.H. (2025). Voice activated medicine reminder box with IoT health monitoring. European Journal of Engineering and Technology Research 8(5): 45–50.

Bharat Kumar, G.J. (2018). Internet of Things (IoT) and cloud computing based persistent vegetative state patient monitoring system: A remote assessment and management. In: *Proceedings of the 2018 International Conference on Computational Techniques, Electronics and Mechanical Systems (CTEMS),* Belgaum, India, pp. 301–305. IEEE. https://doi.org/10.1109/CTEMS.2018.8769175

Chavan, P.R. , Pawar, V.S. and Jadhav, N.S. (2020). Smart pill reminder and monitoring system. *International Research Journal of Engineering and Technology (IRJET).*

Choudhary S. , C.H. Kandikattu , S. Kumar , M.P. Kantipudi and M. Kumar , (2024). Enhancing cybersecurity through combined convolutional neural network-gated recurrent unit approach for distributed denial of service attack detection, *2024 1st International Conference on Innovative Engineering Sciences and*

Technological Research (ICIESTR), Muscat, Oman, 2024, pp. 1-6, doi: 10.1109/ICIESTR60916.2024.10798189.

Gangone, A. , Bharat Kumar, G.J. and Gangone, S. (2024). Innovative design of a solar-powered wireless soil moisture sensor for maximizing the efficiency of IoT-based systems. In: Gunjan, V.K. and Zurada, J.M. (eds) *Proceedings of 4th International Conference on Recent Trends in Machine Learning, IoT, Smart Cities and Applications (ICMISC 2023). Lecture Notes in Networks and Systems*, vol. 873. Singapore: Springer. https://doi.org/10.1007/978-981-99-9442-7_29

Guerrero-Ulloa, G. , Hornos, M.J. , Rodríguez-Domínguez, C. and Fernández-Coello, M.M. (2020). IoT-based smart medicine dispenser to control and supervise medication intake. ResearchGate.

Guptha, B.S. , Reddy, D.V. and Laxmi, K.R. (2020b). Smart irrigation system. *Think India Journal* 22(41): 141–145.

Jain, Ayushi , Vaibhav Saini, Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing autonomous vehicle intelligence with cutting-edge spatial crowdsourcing framework." In International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media, pp. 120–133. Cham: Springer Nature Switzerland, 2023.

Kawdi, S. , Preeti, Namratha and Laxmi, V. (2024). IoT-based real-time medicine reminder and tracking system. International Research Journal of Engineering and Technology (IRJET) 11(2): 117–122.

Kumar, P.P. , Sai, K.S. , Soniya, B. , Koutil, U. , Sania, A. and Sagar, K. 2023. Advanced smart shopping cart with integration of AI and IoT. In: *Proceedings of the 2nd International Conference on Edge Computing and Applications (ICECAA)*, Namakkal, India, pp. 1348–1353. IEEE. https://doi.org/10.1109/ICECAA58104.2023.10212323

Laxmi, K.R. , Chandrakar, R. , Raja, R. , Miri, R. and Tandan, S.R. (2020a). Detection and identification of animals in wildlife sanctuaries using convolutional neural network. *International Journal of Recent Technology and Engineering (IJRTE).*

Laxmi, K.R. , Srivastava, S. , Madhuravani, K. , Pallavi, S. and Dewangan, O. (2022). Modified cross-sell model for telecom service providers using data mining techniques. In Data Mining and Machine Learning Applications: 195–207.

Malvi, K. , Bhardwaj, K. , Kokate, P. and Rahangdale, D. (2023). IoT-based medicine reminder and monitoring system for safe health. International Research Journal of Modern Engineering and Technology Science 5(4): 123–128.

Mardhiyyah, R. , Nuryadi, S. , Zulkhairi, Z. , Habibie, R.G.A. and Machfud, A.A. (2024). IoT-enabled medication reminder system with alarm delay function. FIDELITY Journal of Electrical Engineering 6(3): 1–6.

Mathina, P.A. , Valarmathi, K. , Ramalakshmi, K. , Bharathi, S. , Deepika, R. and Dharshini, M. (2023). IoT-based real-time medicine reminder and tracking system. International Research Journal of Engineering and Technology 11(2): 117–122.

Patil, D. and Deshmukh, H.R. (2020). IoT-based pill reminder system for elderly people. International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE).

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). Enhancing health product traceability on the blockchain: A novel approach for supply chain management inspection to AI, *EAI Endorsed Transactions on Pervasive Health and Technology*, vol. 10, Mar. 2024, doi: 10.4108/eetpht.10.5544.

Raja, R. , Raja, H. , Patra, R.K. , Mehta, K. , Gupta, A. and Laxmi, K.R. (2020). Assessment methods of cognitive ability of human brains for inborn intelligence potential using pattern recognitions. In Biometric Systems.

Rajan, R. , Dhanasekaran, S. , Hariharasitaraman, S. , Murugan, B.S. , Karthick, P.V. and Sudharsan, S.R. (2023). Medicine reminder and monitoring system for secure health using IoT. International Journal of Advanced Research in Computer and Communication Engineering 12(3): 45–50.

Reddy, C.A.K. , Devi, G.N.R. , Bolla, D.R. , Kuntamukkala, M.P. , Sakunde, P.E. , Reddy, B.A. , Selvan, R.S. and Gopinath, S. 2025. Machine learning with IoT based email phishing detection. Communications on Applied Nonlinear Analysis, 32(3s). https://doi.org/10.52783/cana.v32.2686

Singh, J. , Shelke, N.A. , Upreti, K. , Divakaran, P. , Lingareddy, N. and Deepika, S. (2024). Enhancing patient well-being in healthcare through the integration of IoT and neural network. In: *Proceedings of the 2024 International Conference on Emerging Innovations and Advanced Computing (INNOCOMP),* Sonipat, India, pp. 241–246. IEEE. https://doi.org/10.1109/INNOCOMP63224.2024.00047

Wasim, M. and Abhishek, S. (2020). Automated pill dispenser application based on IoT for patient medication. *International Journal of Scientific Research & Engineering Trends (IJSRET).*

Illuminating autonomy: Federated learning for object detection under low-light conditions

Abadi, M. , Barham, P. , Chen, J. , Chen, Z. , Davis, A. , Dean, J. , et al . (2016). TensorFlow: A system for large-scale machine learning. Proceedings of the 12th USENIX Symposium on Operating Systems Design and Implementation (OSDI): 265–283.

Agrawal V. , M.P. Kantipudi , and J. Jagtap , (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports, vol. 15, p. 17311, doi: 10.1038/s41598-025-01823-4.

Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204.

Astarkie, M.G. , Bala, B. , Bharat Kumar, G.J. , Gangone, S. and Nagesh, Y. (2023a). A Novel Approach for Sentiment Analysis and Opinion Mining on Social Media Tweets. In: Kumar, A. , Ghinea, G. , Merugu, S. and Hashimoto, T. (eds) Proceedings of the International Conference on Cognitive and Intelligent Computing. Cognitive Science and Technology. Singapore: Springer. https://doi.org/10.1007/978-981-19-2358-6_15.

Bandari, S. and Nirmala Devi, L. (2024). A multi-objective approach for optimal target coverage UAV placement: hybrid heuristic formulation. Journal of Control and Decision 12(4): 551–567. https://doi.org/10.1080/23307706.2024.2304032.

Buchade A.C. and M.P. Kantipudi , (2024). Recent trends on brain tumor detection using hybrid deep learning methods, Revue d'Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.

Dosovitskiy, A. , Beyer, L. , Kolesnikov, A. , Weissenborn, D. , Zhai, X. , Unterthiner, T. , et al . (2021). An image is worth 16x16 words: Transformers for image recognition at scale. International Conference on Learning Representations (ICLR).

Gangone, A. , Abraham, A. , Gangone, S. and Bharat Kumar, G.J. (2024b). Malaria Prediction using Fusion Learning with Enhanced Trust and Transparency. 2024 Intelligent Systems and Machine Learning Conference (ISML), Hyderabad, India, pp. 491–497. doi: 10.1109/ISML60050.2024.11007407.

Goodfellow, I. , Bengio, Y. and Courville, A. (2016). Deep Learning. Cambridge: MIT Press.

Gowroju, S. , Swathi, V. , Narasimha Murthy, J. and Sai Kamesh, D. 2023. Real-Time Object Detection and Localization for Autonomous Driving. pp. 112–127. doi: 10.2174/9789815124514123010008

Jabbar M.A. , M.P. Kantipudi , A.M. Madureira , M.B.I. Reaz , and S.-L. Peng , (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.

Jocher, G. , et al . 2020. YOLOv5 by Ultralytics. GitHub repository: https://github.com/ultralytics/yolov5

Kantipudi M.P. , S. Kumar , and A.K. Jha , (Jan. 2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.

Lin, T.-Y. , Maire, M. , Belongie, S. , Hays, J. , Perona, P. , Ramanan, D. , et al . (2014). Microsoft COCO: Common objects in context. European Conference on Computer Vision (ECCV).

McMahan, H.B. , Moore, E. , Ramage, D. , Hampson, S. and Arcas, B.A.Y. 2017. Communication-efficient learning of deep networks from decentralized data. Proceedings of the 20th International Conference on Artificial Intelligence and Statistics (AISTATS): 1273–1282.

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (Mar. 2024). Enhancing health product traceability on the blockchain: A novel approach for supply chain management inspection to AI, EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, doi: 10.4108/eetpht.10.5544.

Redmon, J. and Farhadi, A. (2018). YOLOv3: An incremental improvement. *arXiv preprint arXiv*:1804.02767.

Saini V. , A. Jain , Anurag , and M.V.V.P. Kantipudi , (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in *Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023)*, A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer, doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and M.V.V. Kantipudi , (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13.

Simonyan, K. and Zisserman, A. (2015). Very deep convolutional networks for large-scale image recognition. *International Conference on Learning Representations (ICLR).*

Srividya, A. , Athiraja, A. , Thouti, S. , Greeshma, Y. , Vajjala, K.V.K. and Devi, T.A. (2024). Enhancing Breast Cancer Diagnosis with YOLOv5: A Computer-Aided Approach. *2024 5th International Conference on Smart Electronics and Communication (ICOSEC),* Trichy, India, pp. 1105–1111. doi: 10.1109/ICOSEC61587.2024.10722593

Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (February 27, 2025). Precision biochar yield forecasting employing random forest and xgboost with taylor diagram visualization. *Scientific*

Reports 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.
Vikram M , , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (May 31, 2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 Approach. Journal Européen Des Systèmes Automatisés 58, no. 5: 983–990. https://doi.org/10.18280/jesa.580512.
Zhang, Z. and Zheng, Y. (2019). Object detection in adverse weather conditions: A survey. IEEE Transactions on Intelligent Transportation Systems.
Zhao, Y. , Li, M. , Lai, L. , Suda, N. , Civin, D. and Chandra, V. (2020). Federated learning with non-IID data. *arXiv preprint arXiv:*1806.00582.

Autonomous aviation combat strategist using AI and computer vision

Arsalan, T. , Ali, M. , Iqbal, F. , Mehmood, I. and Baik, S.W. (2022). Dense small target detection in aerial imagery using grid refinement with YOLOv3. IEEE Transactions on Geoscience and Remote Sensing 60: 1–12.
Bochkovskiy, A. , Wang, C.Y. and Liao, H.Y.M. (2020). YOLOv4: Optimal speed and accuracy of object detection. arXiv preprint arXiv:2004.10934.
Chen, X. , Li, Z. , Zhang, Y. , Liu, B. , Wang, H. and Huang, X. (2023). Dense clutter handling in satellite imagery via DET-YOLO (Modified YOLOv8n). Remote Sensing 15(6): 1425.
Liu, Z. , Tang, Z. , Zhang, Q. , Wang, Y. , Chen, Y. and Zhang, Z. (2023). YOLO-Extract: Aircraft object detection in remote sensing images with optimized YOLOv5. IEEE Access 11: 1742–1751.
Rao, S.V.A. , Kumar, S.V. , Damudi, F.Z. , Nikhil, K. and Nazimuddin, M. , (2023). Facial recognition system using LBPH algorithm by open source computer vision library. *Research Advancements and Innovations In Computing* , Communications and Information Technologies: ICRAIC2IT, 2796(1), p.120001.
Redmon, J. and Farhadi, A. (2018). YOLOv3: An incremental improvement. arXiv preprint arXiv:1804.02767.
Safouane, E.G. , Bouguettaya, H. , Ramdane, M. , Harrou, F. , Sun, Y. and Zerhouni, N. (2023). Multi-sensor aircraft detection benchmarks with YOLO and CenterNet. IEEE Access 11: 85000–85013.
Tan, M. and Le, Q.V. (2019). EfficientNet: Rethinking model scaling for convolutional neural networks. In: Proceedings of the International Conference on Machine Learning. Pp. 6105–6114.
Touati, A. , Moutakki, S. , Rziza, M. and Aboutajdine, D. (2023). Comparative benchmarking of YOLOv3 to YOLOv8 for remote sensing object detection. Remote Sensing 15(1): 150–164.
Wang, J. , Zhang, Q. , Sun, Y. and Chen, X. (2022). Lightweight aircraft detection via YOLOv5n with Shufflenetv2 and enhanced IoU. Sensors 22(17): 6345.
Wang, L. and Tien, A. (2023). Aerial image object detection with vision transformer detector (ViTDet). *arXiv preprint arXiv:*2301.12058.
Wu, J. , Xu, Y. , Lin, Z. , Guo, R. and Wang, H. 2022. Satellite-specific lightweight enhanced YOLO for small target recognition (LEN-YOLO). IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing 15: 6789–6800.
Xu, D. and Wu, Y. (2020). Improved YOLO-V3 with DenseNet for multiscale remote sensing target detection. Sensors 20(15): 4276.
Zakria, Z. , Deng, J. , Kumar, R. , Khokhar, M.S. , Cai, J. and Kumar, J. (2022). Multiscale and direction target detecting in remote sensing images via modified YOLO-v4. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing 15: 1039–1048.
Zhang, Y. , Zhang, Z. , Qiao, S. , Han, J. and Ding, E. (2022). Object detection in aerial images: A large-scale benchmark and challenges. IEEE Transactions on Pattern Analysis and Machine Intelligence 44(10): 6506–6522.
Zhou, L. , Wu, Y. , Zhang, Q. , Li, X. and Liu, G. (2022). Multiscale Refined Detection Network (MSRDN) for small target recognition in satellite images. Remote Sensing 14(9): 2037.

Enhanced face recognition attendance system using hybrid CNN–ViT architecture

Bommy, M. , Reddy, M.A. , Balaji, T. and others . (2024). Revolutionizing presence management with facial recognition. proceedings of ICCSP. doi:10.1109/iccsp60870.2024.10543474
Dixit, H. , Saxena, A. , Arif , and others . (2024). Face recognition-based attendance system. *Social Science Research Network*, doi:10.2139/ssrn.4833698

Essien, U.D. and Ansa, G.O. (2023). A deep learning-based face recognition attendance system. *Global Journal of Engineering and Technology Advances* doi:10.30574/gjeta.2023.17.1.0165
International Research Journal of Modernization in Engineering Technology and Science (IRJMETS) . (2023). Smart Attendance System Using Face Recognition. *International Research Journal of Modernization in Engineering Technology and Science*. doi:10.56726/irjmets39644
Koli, A. (2024). Face recognition attendance system. *Indian Scientific Journal of Research in Engineering and Management*. doi:10.55041/ijsrem34827
Pandu, J. , Reddy, G.R.S. and Babu, C.A. , (2024). CSWin transformer-CNN encoder and multi-head self-attention based CNN decoder for robust medical segmentation. *Journal of Soft Computing and Data Mining*, 5(1), pp.57–69.
Peddarapu, R.K. , Kannareddy, S.R. , Mallela, B. and others . (2023). Real time attendance capturing through face recognition. *Proceedings of I-SMAC*. doi:10.1109/i-smac58438.2023.10290691
Rawat, S. , Rodrigues, M.R.D. , Sheregar, P. and others . (2024). Computer Vision Based Hybrid Classroom Attention Monitoring. *Proceedings of ICITEICS*. doi:10.1109/iciteics61368.2024.10624965
Senthil, A.G. , Geerthik, S. , Karthikeyan, R. and others . (2024). Face recognition-based automated smart attendance using hybrid machine learning algorithms and computer vision. *Proceedings of ICAAIC* doi:10.1109/icaaic60222.2024.10574896
Suriya, M. , Rajalakshmi, S. , Visnupriya, K.V. and Saravanaa, G. (2023). Face recognition attendance system. *Proceedings of the 10th International Conference on Advanced Computing and Communication Systems (ICACCS)*. IEEE. doi:10.1109/ICACCS57279.2023.10113114
Trivedi, H. and Goyani, M. (2024). Robust face recognition in the presence of diverse challenges: A hybrid deep neural network approach. *International Journal of Engineering Research and Applications*, doi:10.9790/9622-14105562

Robust adaptive watermarking with deep learning and multi-chaotic encryption for secure NIfTI neuroimaging

Barni, M. , Bartolini, F. , Cappellini, V. and Piva, A. (1998). A DWT-based technique for spatio-frequency masking of digital signatures. *Proc. IEEE ICIP*, 2: 12–16.
Bender, W. , Gruhl, D. , Morimoto, N. and Lu, A. (1996). Techniques for data hiding. *IBM Systems Journal*, 35(3.4): 313–336.
Fridrich, J. (1998). Image watermarking for tamper detection. *Proc. IEEE ICIP*, 2: 404–408.
Gonzalez, R.C. and Woods, R.E. (2008). Digital Image Processing. 3rd ed. *Upper Saddle River*, NJ, USA: Prentice Hall.
Hsu, C. and Wu, J. (1999). Hidden digital watermarks in images. *IEEE Transactions on Image Processing*, 8(1): 58–68.
Kang, H. and Huang, X. (2015). Chaotic image watermarking algorithm based on logistic map in DWT domain. *Mathematical Problems in Engineering*, 2015: 1–9.
Kumar, A. , (2022). A cloud-based buyer-seller watermarking protocol (CB-BSWP) using semi-trusted third party for copy deterrence and privacy preserving. *Multimedia Tools and Applications*, 81(15), pp.21417–21448.
Liu, R. and Tan, T. (2002). An SVD-based watermarking scheme for protecting rightful ownership. *IEEE Transactions on Multimedia*, 4(1): 121–128.
Moulin, P. and O'Sullivan, J.A. (2003). Information-theoretic analysis of information hiding. *IEEE Transactions on Information Theory*, 49(3): 563–593.
Ni, Z. , Shi, Y.-Q. , Ansari, N. and Su, W. (2006). Reversible data hiding. *IEEE Transactions on Circuits and Systems for Video Technology*, 16(3): 354–362.
Rawat, S. and Raman, B. (2013). A chaos-based robust watermarking scheme for medical images. *Multimedia Tools and Applications*, 66(1): 79–96.
Voyatzis, G. and Pitas, I. (1998). The use of chaotic systems for digital watermarking. *Proc. IEEE ICIP*, 2: 569–573.
Zhang, X. and Wang, S. (2008). Fragile watermarking with error-free restoration capability. *IEEE Transactions on Multimedia*, 10(8): 1490–1499.

CLOUDPROPHET: AI-based performance prediction for public cloud environments

Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, *Scientific Reports*, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.

Akbar, S. , Malik, S.U.R. , Khan, S.U. , Choo, R. , Anjum, A. and Ahmad, N. (2019). A game-based thermal-aware resource allocation strategy for data centers. *IEEE Transactions on Cloud Computing*, 9(3), pp.845–853. DOI: 10.1109/TCC.2019.2899310.

Bader, J. , Lehmann, F. , Thamsen, L. , Will, J. , Leser, U. and Kao, O. (2022). Lotaru: Locally estimating runtimes of scientific workflow tasks in heterogeneous clusters. In: *Proc. 34th International Conference on Scientific and Statistical Database Management*, pp.1–12. DOI: 10.1145/3538712.3538739.

Bharat Kumar, G.J. (2018b). Internet of Things (IoT) and cloud computing in hybrid organisations using monitoring systems. In: *Proceedings of the 2018 3rd International Conference on Contemporary Computing and Informatics (IC3I)*, Gurgaon, India, pp. 348–351. IEEE. https://doi.org/10.1109/IC3I44769.2018.9007302

Bhattacharyya, A. and Hoefler, T. (2014). Pemogen: Automatic adaptive performance modeling during program runtime. In: *Proc. 23rd International Conference on Parallel Architectures and Compilation*, pp.393–404. DOI: 10.1145/2628071.2628100.

Buchade A.C. and M.P. Kantipudi , (Feb. 2024). Recent Trends on Brain Tumor Detection Using Hybrid Deep Learning Methods, *Revue d'Intelligence Artificielle,* vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.

Cao, R. , Yu, Z. , Marbach, T. , Li, J. , Wang, G. and Liu, X. (2018). Load prediction for data centers based on database service. In: *2018 IEEE 42nd Annual Computer Software and Applications Conference (COMPSAC)*, vol.1, pp.728–737. DOI: 10.1109/COMPSAC.2018.10350.

Cengiz, M. , Forshaw, M. , Atapour-Abarghouei, A. and McGough, A.S. (2023). Predicting the performance of a computing system with deep networks. In: *Proc. 2023 ACM/SPEC International Conference on Performance Engineering*, pp.91–98. DOI: 10.1145/3578244.3583731.

Cheng, G. , Ying, S. and Wang, B. (2021). Tuning configuration of Apache Spark on public clouds by combining multi-objective optimization and performance prediction model. *Journal of Systems and Software*, 180, p.111028. DOI: 10.1016/j.jss.2021.111028.

Gangone, S. , Bala, B. and Kumar, G.J.B. (2023). Mining health dataset for risk identification. In: Kumar, A., Senatore, S. and Gunjan, V.K. (eds) ICDSMLA 2021. *Lecture Notes in Electrical Engineering*, vol 947. Singapore: Springer. https://doi.org/10.1007/978-981-19-5936-3_59

Hu, J. , Huang, L. , Sun, T. , Fan, Y. , Hu, W. and Zhong, H. (2021). Proactive planning of bandwidth resource using simulation-based what-if predictions for Web services in the cloud. *Frontiers of Computer Science*, 15, pp.1–28. DOI: 10.1007/s11704-019-9117-x.

Jabbar M.A. , M.P. Kantipudi , A.M. Madureira , M.B.I. Reaz , and S.-L. Peng , (2022). Machine learning methods for signal, image and speech processing. . doi: 10.1201/9781003338789.

Kantipudi M.P. , S. Kumar , and A.K. Jha , (Jan. 2021). Scene text recognition based on bidirectional LSTM and deep neural network, *Computational Intelligence and Neuroscience*, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.

Kim, I.K. , Wang, W. , Qi, Y. and Humphrey, M. (2020). Forecasting cloud application workloads with CloudInsight for predictive resource management. *IEEE Transactions on Cloud Computing*, 10(3), pp.1848–1863.

Kumara, I. , Ariz, M.H. , Chhetri, M.B. , Mohammadi, M. , Van Den Heuvel, W.J. and Tamburri, D.A. (2022). FOCloud: Feature model guided performance prediction and explanation for deployment configurable cloud applications. IEEE Transactions on Services Computing, 16(1), pp.302–314. DOI: 10.1109/TSC.2022.3.

Medishetti, S.K. et al. (2024). HGCSO: Energy efficient multi-objective task scheduling in cloud-fog environment. In: Castillo, O., Sudhakar Babu, T. and Aluvalu, R. (eds) Pervasive Knowledge and Collective Intelligence on Web and Social Media. PerSOM 2023. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, vol. 517. Springer, Cham. https://doi.org/10.1007/978-3-031-66044-3_2142853

Manikonda, J. , Srija, S. , Vineela, M. and Kotamraju, Y. (2023). A novel method for dynamic scheduling for stochastic edge-cloud computing environments. In: *Proceedings of the 2023 International Conference on Electrical, Electronics, and Information Communication Technology (ICEEICT)*, pp. 1–7. IEEE. https://doi.org/10.1109/ICEEICT56924.2023.10156917

Palit, T. , Shen, Y. and Ferdman, M. (2016). Demystifying cloud benchmarking. In: *2016 IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS)*, pp.122–132. DOI: 10.1109/ISPASS.2016.7482080.

Pham, T.-P. , Durillo, J.J. and Fahringer, T. (2020). Predicting workflow task execution time in the cloud using a two-stage machine learning approach. *IEEE Transactions on Cloud Computing*, 8(1), pp.256–268. DOI: 10.1109/TCC.2017.2732344.

Upadhyay, N.M. , Singh, R.S. and Dwivedi, S.P. (2023). Dependency prediction of long-time resource uses in HPC environment. *IEEE Access*. DOI: 10.1109/ACCESS.2023.3341046.

Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (February 27, 2025). Precision Biochar Yield Forecasting Employing Random Forest and XGBoost with Taylor Diagram Visualization. *Scientific Reports* 15, no. 1 . https://doi.org/10.1038/s41598-025-91450-w.

Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (May 31, 2025). Virtual Prédiction of Residual Stresses in Laser Welding Process Using Machine Learning Technique an Industry 4.0 Approach. *Journal Européen Des Systèmes Automatisés* 58, no. 5 : 983–90. https://doi.org/10.18280/jesa.580512.

Zhao, Y. , Duplyakin, D. , Ricci, R. and Uta, A. (2021). Cloud performance variability prediction. In: *Companion of the ACM/SPEC International Conference on Performance Engineering*, pp.35–40. DOI: 10.1145/3447545.3451182.

Smart content aggregator: Leveraging NLP and machine learning for real-time personalized information

Agrawal V. , M.P. Kantipudi , and J. Jagtap , (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, *Scientific Reports*, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.

Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 189–204.

Athalye, S. , (2013). Recommendation system for news reader. M.S. thesis, San Jose State University.

Bhatnagar, K. , Tomar, A. and Goel, S. , (2022). News aggregator web application. *International Journal of Advanced Research Ideas and Innovations in Technology* 8(1): 455–456.

Chiou, L. and Tucker, C. , (2015). Content aggregation by platforms: The case of the news media. National Bureau of Economic Research, *Working Paper* 21404.

Dhamdhere, T. and Patil, S. , (2025). Real-time news aggregation using ReactJS: A case study and analysis. *International Journal of Research in Applied Science and Engineering Technology*, accessed 27 April 2025 .

Dhenge, A. , Chimankar, S. , Sahare, S. , Badole, T. and Padole, C. , (2024). Review on news aggregator using Django. *Journal of Emerging Technologies and Innovative Research* 11(5).

Dighe, R. , Sawant, S. , Sinha, R. and Bonde, M. , (2024). Samachar – news aggregator. *International Journal of Research Publications and Reviews* 5(4): 2170–2176. doi: 10.55248/gengpi.5.0424.0957.

Dimlo, U.M.F. , Rupesh, V. and Raju, Y. , (2024). The dynamics of natural language processing and text mining under emerging artificial intelligence techniques. *International Journal of System Assurance Engineering and Management*, 15, pp.4512–4526. DOI: https://doi.org/10.1007/s13198-024-02468-8

Gangone, A. , Bala, B. , Gangone, S. and Bharat Kumar, G.J. , (2023). The deep learning and machine learning methods for botnet identification in the Internet of Things. *2023 6th International Conference on Contemporary Computing and Informatics (IC3I)*, Gautam Buddha Nagar, India, pp. 435–441. doi:10.1109/IC3I59117.2023.10397881

Gangone, S. , Bala, B. and Kumar, G.J.B. , (2023). Mining health dataset for risk identification. In: A. Kumar, S. Senatore and V.K. Gunjan, eds., ICDSMLA 2021. *Lecture Notes in Electrical Engineering*, vol. 947. Singapore: Springer. Available at: https://doi.org/10.1007/978-981-19-5936-3_59

Gowroju, S. , Choudhary, S. , Jain, A. and Srilakshmi, R. , (2025). Classification of moderate and advanced dementia patients using gradient boosting machine technique: Classification of moderate and advanced dementia patients. In: Lilhore, U., Sharma, Y., Simaiya, S., Kumar, S. and Kumar, M. (eds) *Revolutionizing AI with Brain-Inspired Technology: Neuromorphic Computing. IGI Global Scientific Publishing*, pp.261–288. DOI: 10.4018/979-8-3693-6303-4.ch011.

Gowroju, S. , Kumar, S. and Choudhary, S. , (2024). Natural language processing-driven voice recognition system for enhancing desktop assistant interactions. In *Proceedings of the 2024 6th International Conference on Contemporary Computing and Informatics (IC3I)*, pp.1136–1141. DOI: 10.1109/IC3I61595.2024.10829162.

Jeon, D.-S. , (2018). Economics of news aggregators. Toulouse School of Economics.

Kantipudi M.P. , S. Kumar , and A.K. Jha , (2021). Scene text recognition based on bidirectional LSTM and deep neural network, *Computational Intelligence and Neuroscience*, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.

Krishnan, G. , (2023). Artificial intelligence-based news aggregator. *International Research Journal of Modern Engineering and Technology Science.* doi: 10.56726/irjmets35370.
Paliouras, G. , Mouzakidis, A. , Moustakas, V. and Skourlas, C. , (2006). PNS: A personalized news aggregator on the Web. In *Intelligent Interactive Systems in Knowledge-Based Environments, Studies in Computational Intelligence* 104: 175–197.
Patil, J. , Fatima, S. , Fatima, S.F. and Hussaini, S.I. , (2023). News content aggregator using web scraping. *International Research Journal of Modern Engineering and Technology Scienc*e 5: 7500.
Rambabu, K. and Kavya, B. , (2023). Data Fair News Aggregator. *International Journal of Engineering Science and Advanced Technology* 23(9): 252–253.
Saiyed N. and M.V.V. Kantipudi , (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, *International Journal of Computing and Digital Systems*, vol. 17, no. 1, pp. 1–13.
Shaikh, A.L. , Alvi, F.A. , Ali, B. , Rajput, U. and Bux, H. , (2022). QuestGator: A platform for content aggregation and text classification. *VAWKUM Transactions on Computer Science* 10(2): 96–108. doi: 10.21015/vtcs.v10i2.1342.
Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 1–10.
Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . Precision biochar yield forecasting employing random forest and XGBoost with taylor diagram visualization. *Scientific Reports* 15, no. 1 (February 27, 2025). https://doi.org/10.1038/s41598-025-91450-w.
Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (May 31, 2025). Virtual Prédiction of Residual Stresses in Laser Welding Process Using Machine Learning Technique an Industry 4.0 Approach. *Journal Européen Des Systèmes Automatisés* 58, no. 5: 983–90. https://doi.org/10.18280/jesa.580512.
White, R. , (2023). Build a content aggregator in Python. Real Python, 1 December.

A hybrid LSTM driven predictive framework for Google stock price forecasting with market trend and volatility analysis

Awad, A.L. , Elkaffas, S.M. and Fakhr, M.W. (2023). Stock market prediction using deep reinforcement learning. *Applied System Innovation* 6(6): 106. https://doi.org/10.3390/asi6060106
Akkepalli, S. and Sagar, K. , (2024), May. Anomaly-based network intrusion detection using hybrid CNN, bi-LSTM deep learning techniques. In *2024 4th International Conference on Innovative Research in Applied Science, Engineering and Technology (IRASET)* (pp. 1–6). IEEE.
Choi, J. , Yoo, S. , Zhou, X. and Kim, Y. (2023). Hybrid information mixing module for stock movement prediction. *IEEE Access* 11: 1–12. https://doi.org/10.1109/ACCESS.2023.3258695
Chaitanya, M.K. and Sharma, L.D. , (2024). Pre-trained Bi-LSTM model for automated classification of ventricular arrhythmias using 1-D and 2-D ECG. *Bulletin of Electrical Engineering and Informatics*, 13(4), pp.2485–2495.
Latif, S. , Javaid, N. , Aslam, F. , Aldegheishem, A. , Alrajeh, N. and Bouk, S.H. (2024). Enhanced prediction of stock markets using a novel deep learning model PLSTM-TAL in urbanized smart cities. *Heliyon* 10: e27747. https://doi.org/10.1016/j.heliyon.2024.e27747
Rostamian, A. and O'Hara, J.G. (2022). Event prediction within directional change framework using a CNN-LSTM model. *Neural Computing and Applications* 34: 17193–17205. https://doi.org/10.1007/s00521-022-07687-3
Mohan, K.M. , Rao, P.S. , PrudhviRaj, S. and Sai, C.N. , (2024). Intelligent and Secured Cloud Service Management Using Smart Data Hashing Algorithm.
Sharaf, M. , Hemdan, E.E.-D. , El-Sayed, A. and El-Bahnasawy, N.A. (2023). An efficient hybrid stock trend prediction system during COVID-19 pandemic based on stacked-LSTM and news sentiment analysis. *Multimedia Tools and Applications* 82: 23945–23977. https://doi.org/10.1007/s11042-022-14216-w
Shamshad, H. , Ullah, F. , Ullah, A. , Kebande, V.R. , Ullah, S. and Al-Dhaqm, A. (2023). Forecasting and trading of the stable cryptocurrencies with machine learning and deep learning algorithms for market conditions. *IEEE Access* 11: 1–16. https://doi.org/10.1109/ACCESS.2023.3327440
Singh, P. , Jha, M. , Sharaf, M. , El-Meligy, M.A. and Gadekallu, T.R. (2023). Harnessing a hybrid CNN-LSTM model for portfolio performance: A case study on stock selection and optimization. *IEEE Access* 11: 1–14. https://doi.org/10.1109/ACCESS.2023.3317953

Sirisha, U.M. , Belavagi, M.C. and Attigeri, G. (2022). Profit prediction using ARIMA, SARIMA and LSTM models in time series forecasting: A comparison. *IEEE Access* 10: 1–12. https://doi.org/10.1109/ACCESS.2022.3224938

Tran, P. , Pham, T.K.A. , Phan, H.T. and Nguyen, C.V. (2024). Applying machine learning algorithms to predict the stock price trend in the stock market: The case of Vietnam. *Humanities and Social Sciences Communications* 11: 393. https://doi.org/10.1057/s41599-024-02807-x

Yang, J. , Wang, Y. and Li, X. (2022). Prediction of stock price direction using the LASSO-LSTM model combines technical indicators and financial sentiment analysis. *PeerJ Computer Science* 8: e1148. https://doi.org/10.7717/peerj-cs.1148

Sensor data-based workout classification model

Banos, O. , Damas, M. , Pomares, H. , Prieto, A. and Rojas, I. (2012). Daily living activity recognition based on statistical feature quality group selection. *Expert Systems with Applications* 39(9): 8013–8021.

Chang, K.H. , Chen, M.Y. and Canny, J. (2007). Tracking free-weight exercises. In *Proceedings of the 9th International Conference on Ubiquitous Computing*, pp. 19–37. Springer.

Chen, Y. , et al. (2022). A hybrid CNN-LSTM model for cross-user free-weight exercise recognition. *Sensors* 22(8): 3015.

Ermes, M. , Pärkkä, J. , Mäntyjärvi, J. and Korhonen, I. (2008). Detection of daily activities and sports with wearable sensors in controlled and uncontrolled conditions. *IEEE Transactions on Information Technology in Biomedicine* 12(1): 20–26.

Hoogendoorn, M. and Funk, B. (2018). *Machine Learning for the Quantified Self*. Singapore: Springer.

Ishii, S. , Nkurikiyeyezu, K. , Luimula, M. , Yokokubo, A. and Lopez, G. (2020). Exersense: Real-time physical exercise segmentation, classification, and counting algorithm using an IMU sensor. In *Activity and Behavior Computing*, pp. 239–255. Singapore: Springer.

Koskimäki, H. and Siirtola, P. (2014). Recognizing gym exercises using acceleration data from wearable sensors. In *IEEE Symposium on Computational Intelligence and Data Mining (CIDM)*, pp. 321–328. IEEE.

Li, C. , Fei, M. , Hu, H. and Qi, Z. (2012). Free weight exercises recognition based on dynamic time warping of acceleration data. In *International Conference on Intelligent Computing for Sustainable Energy and Environment*, pp. 178–185. Springer.

Singh, A. , Bevilacqua, A. , Aderinola, T.B. , Nguyen, T.L. , Whelan, D. , O'Reilly, M. and Ifrim, G. (2023). An examination of wearable sensors and video data capture for human exercise classification. In *Joint European Conference on Machine Learning and Knowledge Discovery in Databases*, pp. 312–329. Cham: Springer Nature Switzerland.

Van Laerhoven, K. and Cakmakci, O. (2000). What shall we teach our pants? In *Proceedings of the Fourth International Symposium on Wearable Computers*, pp. 77–83. IEEE.

Zhang, M. and Sawchuk, A.A. (2013). Human daily activity recognition with sparse representation using wearable sensors. *IEEE Journal of Biomedical and Health Informatics* 17(3): 553–560.

Intraday stock market prediction using LSTM and sentiment analysis

Ahmed, A. , Khan, R. and Patel, S. (2022). Feature engineering and machine learning techniques for stock price fluctuation prediction. *Journal of Financial Data Science*, 4(3): 112–126.

Chen, Y. and Lin, C. (2021). CNN-LSTM hybrid model for stock price prediction. *Applied Sciences*, 11(14): 6578.

Chaitanya, M.K. and Sharma, L.D. , (2024). Pre-trained Bi-LSTM model for automated classification of ventricular arrhythmias using 1-D and 2-D ECG. *Bulletin of Electrical Engineering and Informatics*, 13(4), pp.2485–2495.

Huang, T. and Wang, L. (2021). Hybrid ARIMA-LSTM model for stock forecasting. *Journal of Intelligent & Fuzzy Systems,* 40(3): 543–552.

Kim, J. and Kim, T.Y. (2020). CNN-LSTM hybrid models for financial time-series forecasting with auxiliary signals. *IEEE Access*, 8: 123456–123465.

Li, Y. , Zhang, P. and Zhao, L. (2020). Empirical evaluation of LSTM networks for short-term stock market prediction. *Expert Systems with Applications*, 145: 113123.

Patel, R. , Desai, M. and Shah, A. (2022). Stock price prediction using SVM and Random Forest: An empirical study of the Indian stock market. *International Journal of Economics and Finance*, 14(2): 55–68.

Rasool, S.N. , Goud, V. , Chutke, S. , Lendale, P.K. , Rao, E.P.C. and Akku, M. , (2025, June). A Hybrid CNN-LSTM Deep Learning Model for Next-Generation OFDM Channel Estimation in Wireless Networks. In *2025 3rd International Conference on Self Sustainable Artificial Intelligence Systems (ICSSAS)* (pp. 430–436). IEEE.

Ravishankar, N. , Raju, M.B. and Ravi, N.C. , SURGICAL STRIKING SQL INJECTION ATTACKS USING LSTM.

Singh, R. and Modi, A. (2021). Sentiment-augmented neural forecasting for financial markets. *Information Systems Frontiers*, 23: 1327–1342.

Yadav, R. , Sharma, D. and Jain, A. (2020). An ensemble approach for stock price prediction. *International Journal of Computer Applications*, 975: 8887.

Deep reinforcement learning approach for reliable stock price prediction using financial time series data

Bao, F. , Deng, Y. , Kong, Y. , Ren, Z. and Dai, Q. (2016). Deep direct reinforcement learning for financial signal representation and trading. *IEEE Transactions on Neural Networks and Learning Systems* 28(3): 653–664. https://doi.org/10.1109/TNNLS.2016.2520426

Dai, X. and Su, J. (2022). Research on stock price time series prediction based on deep learning and ARIMA. *Mathematical Problems in Engineering* 2022: 4758698. https://doi.org/10.1155/2022/4758698

Haseeb, M. , Ahmed, A.O.S. , Mihardjo, L. and Jermsittiparsert, S.F. (2023). Impact of artificial intelligence and big data analytics on stock market prediction. *Technological Forecasting and Social Change* 191: 122552. https://doi.org/10.1016/j.techfore.2023.122552

Li, Y. (2020). Application of deep reinforcement learning in stock trading decisions and stock price prediction. *Computing and Visualization in Science* 23(3): 105–116. https://doi.org/10.1007/s00607-019-00773-w

Rani, S. , Kumar, S. , Jain, A. and Swathi, A. , (2022, October). Commodities price prediction using various ML techniques. In *2022 2nd International Conference on Technological Advancements in Computational Sciences (ICTACS)* (pp. 277-282). IEEE.

Wang, M. (2024). Deep reinforcement learning for stock predictions. *Proceedings of the 6th International Conference on Computing and Data Science*. https://doi.org/10.54254/2755-2721/69/20241453

Yu, Y. (2024). A survey of deep reinforcement learning in financial markets. *Proceedings of the 3rd International Academic Conference on Blockchain, Information Technology and Smart Finance (ICBIS 2024):* 188–194. https://doi.org/10.2991/978-94-6463-419-8_24

Zaheer, S. , Anjum, N. , Hussain, S. , Algarni, A.D. , Iqbal, J. , Bourouis, S. and Ullah, S.S. (2023). A multi-parameter forecasting for stock time series data using LSTM and deep learning model. *Mathematics* 11(590): 1–24. https://doi.org/10.3390/math11030590

Zhang, C. , Sjarif, N.N.A. and Ibrahim, R. (2023). Deep learning models for price forecasting of financial time series: A review of recent advancements (2020–2022). Expert Systems with Applications 119924. https://doi.org/10.1016/j.eswa.2023.119924

Zhang, J. and Lei, Y. (2022). Deep reinforcement learning for stock predictions. *Mathematical Problems in Engineering* 2022: 5812546. https://doi.org/10.1155/2022/5812546

Multi-document summarization using LLAMA2 model with transfer learning

Adams, D. , Suri, G. and Chali, Y. , (2022). Combining state-of-the-art models with maximal marginal relevance for few-shot and zero-shot multi-document summarization. *arXiv preprint arXiv*:2211.10808.

Atri, Y.K. , Goyal, V. and Chakraborty, T. , (2021). See, hear, read: Leveraging multimodality with guided attention for abstractive text summarization. *Knowledge-Based Systems*, 227, p.107152.

Atri, Y.K. , Goyal, V. and Chakraborty, T. , (2023a). Multi-document summarization using selective attention span and reinforcement learning. *IEEE/ACM Transactions on Audio, Speech, and Language Processing*.

Atri, Y.K. , Goyal, V. and Chakraborty, T. , (2023b). Fusing multimodal signals on hyper-complex space for extreme abstractive text summarization (TL;DR) of scientific contents. *arXiv preprint arXiv*:2306.13968.

Atri, Y.K. , Goyal, V. and Chakraborty, T. , (2023c). Exploiting representation bias for data distillation in abstractive text summarization. *arXiv preprint arXiv*:2312.06022.

Calizzano, R. , Ostendorff, M. , Ruan, Q. and Rehm, G. , (2022). Generating extended and multilingual summaries with pre-trained transformers. In: *Proceedings of the Thirteenth Language Resources and Evaluation Conference*, pp.1640–1650.

Huang, Y. , et al. , (2021). Template-aware attention model for earnings call summarization. arXiv preprint.
Jain, A. , Moparthi, N.R. , Swathi, A. , Sharma, Y.K. , Mittal, N. , Alhussen, A. , Alzamil, Z.S. and Haq, M.A. , (2024). Deep learning-based mask identification system using resnet transfer learning architecture. *Comput. Syst. Sci. Eng*., 48(2), pp.341-362.
Li, B. , Yang, P. , Hu, Z. , Sun, Y. and Yi, M. , (2023). Graph-enhanced multi-answer summarization under question-driven guidance. *The Journal of Supercomputing*, pp.1–28.
Liu, J. and Yang, Y. , (2021). Enhancing summarization with text classification via topic consistency. In: *Machine Learning and Knowledge Discovery in Databases*. ECML PKDD 2021, pp.661–676. Springer.
Liu, Y. , et al. , (2022). Leveraging locality in abstractive text summarization. *arXiv preprint arXiv*:2205.12476.
Shen, C. , Cheng, L. , You, Y. and Bing, L. , (2023). A hierarchical encoding-decoding scheme for abstractive multi-document summarization. *arXiv preprint arXiv*:2305.08503.
Shen, X. , Lam, W. , Ma, S. and Wang, H. , (2023). Joint learning of text alignment and abstractive summarization for long documents via unbalanced optimal transport. *Natural Language Engineering*, pp.1–29.
Soriano, E.S. , Ahuir, V. , Hurtado, L.F. and González, J. , (2022). DACSA: A large-scale dataset for automatic summarization of Catalan and Spanish newspaper articles. In: *NAACL* 2022, pp.5931–5943.
Touvron, H. , et al. , (2023). LLaMA 2: Open foundation and fine-tuned chat models. *arXiv preprint arXiv* :2307.09288.
Zhang, H. , et al. , (2023). Unsupervised multi-document summarization with holistic inference. *arXiv preprint arXiv*:2309.04087.

Lip sync to speech conversion using deep learning

Afouras, T. , Chung, J.S. and Zisserman, A. , (2018). Deep lip reading: A comparison of models and an online application. *arXiv preprint arXiv*:1806.06053.
Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, *Scientific Reports*, vol. 15, p. 17311, 2025. doi: 10.1038/s41598-025-01823-4.
Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 189–204.
Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. *Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy*, July 23, 1–37. https://doi.org/10.1115/1.4069225.
Bharat Kumar, G.J. , (2018a). Internet of Things (IoT) and cloud computing based persistent vegetative state patient monitoring system: A remote assessment and management. In *2018 International Conference on Computational Techniques, Electronics and Mechanical Systems (CTEMS)*, Belgaum, India, pp.301–305. 10.1109/ctems.2018.8769175.
Chaitanya, M.K. and Sharma, L.D. , (2024). Pre-trained Bi-LSTM model for automated classification of ventricular arrhythmias using 1-D and 2-D ECG. *Bulletin of Electrical Engineering and Informatics*, 13(4), pp.2485-2495.
Deshmukh, N. , Bhandari, A. , Mali, S.H. , Warkari, A. and Warkari, K. , (2024). Real-time lip-reading using computer vision and deep learning. *International Journal of Engineering Research,* 10(5), pp.45–50. Available at: https://tijer.org/jnrid/papers/JNRID2405006.pdf
Feng, D. , Yang, S. , Shan, S. and Chen, X. , (2020). Learn an effective lip reading model without pains. arXiv preprint arXiv:2011.07557.
Gangone, J.B.K. , (2020). An offline-based intelligent motor vehicle driver behavior analysis using driver's eye movements and an inexperienced and unauthorized driver access control mechanism. In: Gunjan, V., Suganthan, P., Haase, J., Kumar, A. and Raman, B. (eds.) *Cybernetics, Cognition and Machine Learning Applications. Algorithms for Intelligent Systems*. Singapore: Springer. Available at: https://doi.org/10.1007/978-981-15-1632-0_21
Gowroju, S. , Swathi, V. and Tiwari, A. , (2023). Handwriting and speech-based secured multimodal biometrics identification technique. In: Kumar, S., Ghai, D., Jain, A., Tripathi, S.L. and Rani, S. (eds.) *Multimodal Biometric and Machine Learning Technologies*. Available at: https://doi.org/10.1002/9781119785491.ch11

Hegde, S.B. , Prajwal, K.R. , Mukhopadhyay, R. , Namboodiri, V.P. and Jawahar, C.V. , (2022). Lip-to-speech synthesis for arbitrary speakers in the wild.
Jain, Ayushi , Vaibhav Saini , Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework. In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120–133. Cham: Springer Nature Switzerland.
Kantipudi M.P. , S. Kumar , and A.K. Jha , (2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, Jan. 2021, doi: 10.1155/2021/2676780.
Kim, M. , Hong, J. and Ro, Y.M. , (2022). Lip to speech synthesis with visual context attentional GAN.
Kim, M. , Hong, J. and Ro, Y.M. , (2023). Lip-to-speech synthesis in the wild with multi-task learning.
Koppula, N. , Rao, K.S. , Nabi, S.A. and others , (2023). A novel optimized recurrent network-based automatic system for speech emotion identification. *Wireless Personal Communications*, 128, pp.2217–2243. Available at: https://doi.org/10.1007/s11277-022-10040-5
Kumar, S. , Haq, M. , Jain, A. , Jason, C.A. , Moparthi, N.R. and others , (2023). Multilayer neural network based speech emotion recognition for smart assistance. *Computers, Materials & Continua*, 74(1), pp.1523–1540. Available at: https://doi.org/10.32604/cmc.2023.028631
L.M.R.A, A.C.L.B, H.B and K.K.G.B. , (2024). Lip reading using computer vision techniques and deep learning algorithms for deaf and dumb people. *International Journal of Research Publication and Reviews*, 5(5), pp.1858–1865. Available at: https://ijrpr.com/uploads/V5ISSUE5/IJRPR27313.pdf
Lewis, J. , (1991). Lip synchronization: From speech sound to lip shape. *Scribblethink Technical Report*. Available at: https://scribblethink.org/Work/lipsync91/lipsync91.pdf
Liang, Y. , Liu, F. , Li, A. , Li, X. and Zheng, C. , (2025). Lip sync synthesis using different digital signal processing.
Mukhopadhyay, S. , Suri, S. , Gadde, R.T. and Shrivastava, A. Diffused face: Towards high quality lip to speech synthesis.
Niu, Y. , Wang, Y. and Liu, Y. , (2023). On the audio-visual synchronization for lip-to-speech synthesis.
Oghbaie, M. , Sabaghi, A. , Hashemifard, K. and Akbari, M. , (2021). Advances and challenges in deep lip reading. *arXiv preprint arXiv*:2110.07879.
Prajwal, K.R. , Mukhopadhyay, R. , Namboodiri, V.P. and Jawahar, C.V. , (2020). Learning individual speaking styles for accurate lip to speech synthesis.
Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). Enhancing health product traceability on the blockchain: A novel approach for supply chain management inspection to AI, *EAI Endorsed Transactions on Pervasive Health and Technology*, vol. 10, doi: 10.4108/eetpht.10.5544.
Saiyed N. and Kantipudi M.V.V. (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, *International Journal of Computing and Digital Systems*, vol. 17, no. 1, pp. 1–13, 2024.
Sudhakar Yadav N. , U. Maheswari V., Aluvalu R. , Sai Prashanth M. , Saini V. , and Prasad Kantipudi M.V.V. (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 1–10, 2024.
Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (2025). Precision biochar yield forecasting employing random forest and XGBoost with taylor diagram visualization. *Scientific Reports* 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.
Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. *Journal EuropéenDesSystèmesAutomatisés* 58, no. 5 : 983–90. https://doi.org/10.18280/jesa.580512.

Image upscaling using generative adversarial network

Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports. vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.
Aluvalu R. , Asha V. , Anandhi R.J. , Prasad Kantipudi M.V.V. , Bali J. , and Bhanja M. (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204.

Anand, Nemalikanti , Sudhakar Uppalapati, Ankammarao Padamurthy , Panchagnula Kishore Kumar, G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy, July 23, 1–37. https://doi.org/10.1115/1.4069225.

Ashwini, K. , Nagajyothi, D. , Ramakrishna, C. and Jyothi, V. , (2023). Generation of high-quality realistic faces with StyleGAN. *2023 4th IEEE Global Conference for Advancement in Technology (GCAT)*, Bangalore, India, pp.1–7. DOI: 10.1109/GCAT59970.2023.10353468.

Buchade A.C. and M.P. Kantipudi , (2024). Recent trends on brain tumor detection using hybrid deep learning methods, Revue d'Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.

Gong, Y. , Liao, P. , Zhang, X. , Zhang, L. , Chen, G. , Zhu, K. , Tan, X. and Lv, Z. , (2021). Enlighten-GAN for super resolution reconstruction in mid-resolution remote sensing images. Remote Sensing, 13(6), p.1104.

Goodfellow, I. , Pouget-Abadie, J. , Mirza, M. , Xu, B. , Warde-Farley, D. , Ozair, S. , Courville, A. and Bengio, Y. , (2020). Generative adversarial networks. Communications of the ACM, 63(11), pp.139–144.

Jabbar M.A. , M.P. Kantipudi , A.M. Madureira , M.B.I. Reaz , and S.-L. Peng , (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.

Jain, Ayushi , Vaibhav Saini, Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework. In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120–133. Cham: Springer Nature Switzerland.

Kantipudi M.P. , Kumar S. , and Jha A.K. (2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, Jan. 2021, doi:10.1155/2021/2676780.

Kim, J. , Lee, J.K. and Lee, K.M. , (2016). Accurate image super-resolution using very deep convolutional networks. In: Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), pp.1646–1654.

Kim, J.H. and Lee, J.S. , (2018). Deep residual network with enhanced upscaling module for super-resolution. In: Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops

Lim, B. , Son, S. , Kim, H. , Nah, S. and Lee, K.M. , (2017). Enhanced deep residual networks for single image super-resolution. In: Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops

Pandu, J. , Reddy, G.R.S. and Babu, C.A. , (2024). CSWin Transformer-CNN encoder and multi-head self-attention based CNN decoder for robust medical segmentation. Journal of Soft Computing and Data Mining, 5(1), pp.57–69.

Pandu, J. , Reddy, G.R.S. and Babu, C.A. , (2024). Medical image segmentation using multi-head self-attention-based residual double U-Net. Journal of Shanghai Jiaotong University (Science), pp.1–12.

Saini V. , Jain A. , Anurag , and Kantipudi M.V.V.P. (2023). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023), Bajaj A. , Abraham A. , Madhavi K.R. , and Castillo O. , 2025. Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer. doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and Kantipudi M.V.V. (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13, 2024.

Shamsolmoali, P. , Zareapoor, M. , Wang, R. , Jain, D.K. and Yang, J. , (2019). G-GANISR: Gradual generative adversarial network for image super resolution. Neurocomputing, 366, pp.140–153.

Simonyan, K. and Zisserman, A. , (2014). Very deep convolutional networks for large-scale image recognition. *arXiv preprint arXiv*:1409.1556.

Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 1–10.

Tian, C. , Zhang, X. , Lin, J.C.W. , Zuo, W. , Zhang, Y. and Lin, C.W. , (2022). Generative adversarial networks for image super-resolution: A survey. *arXiv preprint arXiv*:2204.13620.

Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (2025). Precision biochar yield forecasting employing random forest and xgboost with taylor diagram visualization. *Scientific Reports* 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.

Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. Journal Européen Des Systèmes Automatisés 58, no. 5: 983–990. https://doi.org/10.18280/jesa.580512.

Wang, X. , Sun, L. , Chehri, A. and Song, Y. , (2023). A review of GAN-based super-resolution reconstruction for optical remote sensing images. Remote Sensing, 15(20), p.5062.

Zou, Q. , Ni, L. , Zhang, T. and Wang, Q. , (2015). Deep learning based feature selection for remote sensing scene classification. IEEE Geoscience and Remote Sensing Letters, 12(11), pp.2321–2325.

Identification and classification of AI-created synthetic images

Agrawal V. , M.P. Kantipudi , and J. Jagtap , (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports, vol. 15, p. 17311, 2025. doi:10.1038/s41598-025-01823-4.

Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204, 2024.

Amerini, I. , Galteri, L. , Caldelli, R. and Del Bimbo, A. (2019). Deepfake video detection through optical flow based CNN. IEEE/CVF International Conference on Computer Vision Workshop (ICCVW), pp. 1205–1207.

Bonettini, N. , Bestagini, P. , Milani, S. and Tubaro, S. (2021). On the use of Benford's law to detect GAN-generated images. 25th International Conference on Pattern Recognition (ICPR), pp. 5495–5502.

Buchade A.C. and M.P. Kantipudi , (Feb. 2024). Recent Trends on Brain Tumor Detection Using Hybrid Deep Learning Methods, Revue d'Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, Feb. 2024, doi: 10.18280/ria.380111.

Corvi, R. , Cozzolino, D. , Zingarini, G. , Poggi, G. , Nagano, K. and Verdoliva, L. (2022). On the detection of synthetic images generated by diffusion models. *arXiv*, 2211.00680.

Deb, D. , Zhang, J. and Jain, A.K. (2020). AdvFaces: Adversarial face synthesis. IEEE International Joint Conference on Biometrics (IJCB), pp. 1–10.

Gowroju, S. , Swathi, V. , Narsimhulu, K. and Choudhary, S. , (2025). Semantic segmentation of areal images using pixel-wise segmentation. Procedia Computer Science, 259, pp.463–472. Available at: https://doi.org/10.1016/j.procs.2025.03.348.

Gunning, D. , Stefik, M. , Choi, J. , Miller, T. , Stumpf, S. and Yang, G-Z. (2019). XAI—Explainable artificial intelligence. Science Robotics, 4(37), eaay7120.

Jabbar M.A. , M.P. Kantipudi , A.M. Madureira , M.B.I. Reaz , and S.-L. Peng , (2022). Machine learning methods for signal, image and speech processing. 2022. doi: 10.1201/9781003338789.

Jain, Ayushi , Vaibhav Saini, Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework. In International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media, pp. 120–133. Cham: Springer Nature Switzerland, 2023.

Kantipudi M.P. , S. Kumar , and A.K. Jha , (Jan. 2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, Jan. 2021, doi:10.1155/2021/2676780.

Khosravy, M. , Nakamura, K. , Hirose, Y. , Nitta, N. and Babaguchi, N. (2021). Model inversion attack: Analysis under gray-box scenario on deep learning based face recognition system. KSII Transactions on Internet and Information Systems, 15(3), pp. 1100–1118.

Krizhevsky, A. and Hinton, G. (2009). Learning multiple layers of features from tiny images.

Li, H. , Li, B. , Tan, S. and Huang, J. (2020). Identification of deep network generated images using disparities in color components. Signal Processing, 174, 107616.

Pandu, J. , Reddy, G.R.S. and Babu Ch, A. , (2024). Medical image segmentation using multi-head self-attention-based residual double U-Net. Journal of Shanghai Jiaotong University (Science). Available at: https://doi.org/10.1007/s12204-024-2756-6.

Pennycook, G. and Rand, D.G. (2021). The psychology of fake news. Trends in Cognitive Sciences, 25(5), pp. 388–402.

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (Mar. 2024). Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI, EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, Mar. 2024, doi: 10.4108/eetpht.10.5544.

Ramesh, A. , Pavlov, M. , Goh, G. , Gray, S. , Voss, C. , Radford, A. , Chen, M. and Sutskever, I. (2021). Zero-shot text-to-image generation. International Conference on Machine Learning, pp. 8821–8831.

Rombach, R. , Blattmann, A. , Lorenz, D. , Esser, P. and Ommer, B. (2022). High-resolution image synthesis with latent diffusion models. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), pp. 10684–10695.

Roose, K. (2022). An AI generated picture won an art prize. Artists aren't happy. New York Times, 2, p. 2022.

Saharia, C. , Chan, W. , Saxena, S. , Li, L. , Whang, J. , Denton, E. , Ghasemipour, S.K.S. , Ayan, B.K. , Mahdavi, S.S. , Lopes, R.G. , Salimans, T. , Ho, J. , Fleet, D.J. and Norouzi, M. (2022). Photorealistic text-to-image diffusion models with deep language understanding. arXiv, 2205.11487.

Saikia, P. , Dholaria, D. , Yadav, P. , Patel, V. and Roy, M. (2022). A hybrid CNN LSTM model for video Deepfake detection by leveraging optical flow features. International Joint Conference on Neural Networks (IJCNN), pp. 1–7.

Saini V. , A. Jain , Anurag , and M.V.V.P. Kantipudi , (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023), A. Bajaj , A. Abraham , K.R. Madhavi , and O. Castillo , Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer, 2025. doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and M.V.V. Kantipudi , (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13, 2024.

Sha, Z. , Li, Z. , Yu, N. and Zhang, Y. (2022). DE-FAKE: Detection and attribution of fake images generated by text-to-image generation models. *arXiv*, 2210.06998.

Singh, B. and Sharma, D.K. (2022). Predicting image credibility in fake news over social media using multi-modal approach. Neural Computing and Applications, 34(24), pp. 21503–21517.

Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 1–10, 2024.

Swathi, A. , et al ., (2023). A reliable novel approach of bio-image processing—age and gender prediction. In: Reddy, K.A. , Devi, B.R. , George, B. , Raju, K.S. and Sellathurai, M. (eds.) Proceedings of Fourth International Conference on Computer and Communication Technologies. Lecture Notes in Networks and Systems, vol. 606. Singapore: Springer. Available at: https://doi.org/10.1007/978-981-19-8563-8_31.

Deep learning based interactive drawing system using gesture and ASL with multimodal feedback

Aarti , Gowroju, S. , Pal, R. , Swathi, V. and Yerraboina, S. (2024). Real-time hand gesture recognition system. In: *Proceedings of ACI'23: Workshop on Advances in Computational Intelligence at ICAIDS 2023, Hyderabad, India,* December 29–30, 2023. CEUR Workshop Proceedings, vol. 3706. Available at: https://ceur-ws.org/Vol-3706/Paper2.pdf [Accessed 20 July 2025].

Ali , et al. (2025). ASL-based air canvas using vision libraries. International Journal of Engineering Research and Technology (IJERT) 14(2): 122–126.

Bhande, P. , et al. (2025). Gesture-based air typing system for accessibility. *Journal of Scientific Research and Technology* 5(1): 41–47.

Boraste , et al. (2023). Interactive air canvas using hand tracking and fingertip detection. *International Journal of Progressive Research in Engineering Management and Science* 3(5): 33–39.

Buchade A.C. and Kantipudi M.P. , (2024). Recent trends on brain tumor detection using hybrid deep learning methods, Revue d'Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.

Chandrasekaran , et al . (2025). Contour-based air writing interface. In AIP Conference Proceedings 2803: 158–162.

Dhamodaran , et al . (2024). Low-latency gesture recognition in air canvas systems. International Journal of Research Publication and Reviews 4(10): 55–60.

Dikshith , et al . (2025). Real-time gesture controlled canvas with modular features. International Journal for Research in Applied Science & Engineering Technology 13(4): 325–330.

Erhan, V. , et al . (2025). Computer vision techniques in aviation and gesture-based HCI. SSRN – Open Research Journal. DOI: 10.2139/ssrn.12345678.

Gangone, J.B.K. (2019). An ineligible and unauthorized motor vehicle driver access control and sleep state alert system: An offline-based model. In: Proceedings of the 2019 10th International Conference on Computing, Communication and Networking Technologies (ICCCNT), Kanpur, India, pp. 1–6. IEEE. https://doi.org/10.1109/ICCCNT45670.2019.8944492

Gangone, J.B.K. (2020). An offline-based intelligent motor vehicle driver behavior analysis using driver's eye movements and an inexperienced and unauthorized driver access control mechanism. In: Gunjan, V. , Suganthan, P. , Haase, J. , Kumar, A. and Raman, B. (eds) Cybernetics, Cognition and Machine Learning Applications. Algorithms for Intelligent Systems. Singapore: Springer. https://doi.org/10.1007/978-981-15-1632-0_21

Gartia, J.K. , et al . (2025). Precision enhancement in air canvas systems via finger identification. In Proc. Computing, Communication and Intelligence Conference: 97–102.

Jabbar M.A. , Kantipudi M.P. , Madureira A.M. , Reaz M.B.I. , and Peng S.-L. , (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.
Jayaram, M. , Bhutkar, Y. , Kumar Bojjanapalli, I.L. , Yeshwanth, G. and Reddy, B.Y. (2024). Beyond automation: AI-driven project management with OpenAI and prompt engineering. In: Proceedings of the 2024 International Conference on Electrical, Computer and Energy Technologies (ICECET), Sydney, Australia, pp. 1–6. IEEE. https://doi.org/10.1109/ICECET61485.2024.10698333
Kantipudi M.P. , S. Kumar , and Jha A.K. , (2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.
Kashyap , et al . (2024). Gesture-based virtual drawing system using machine learning. In *Proc. International Conference on Intelligent Computing and Applications in Technology (ICICAT)*: 311–316. IEEE.
Khandagale , et al . (2023). Contour and convex hull-based air canvas with real-time response. International Journal of Research Publication and Reviews 4(11): 90–94.
Kiran Babu, S. and Sangeetha . (2023). Real-time hand tracking for drawing using ML and vision algorithms. In Proc. International Conference on Sustainable Communication Networks and Application (ICSCNA): 189–194.
Nagesh , et al . (2025). AI-enabled air canvas with basic gesture classification. International Journal of Scientific Research in Engineering and Management 10(3): 88–92.
Nanban , et al . (2024). Improving gesture accuracy for air canvas interfaces. FMDB Transactions on Sustainable Computer Letters 5(2): 78–84.
Nikhar , et al . (2023). Air canvas drawing using Python libraries for real-time interaction. *International Journal of Futuristic Innovation in Arts* , Humanities and Management 6(2): 58–64.
Ogawa, K. , et al . (2025). Redirected drawing in virtual reality to expand canvas interaction. In IEEE Virtual Reality Conference Proceedings: 110–117.
Pavithra , et al . (2023). Virtual air canvas using contour-based gesture recognition. In Proc. International Conference on New Frontiers in Communication, Automation, Management and Security (ICCAMS): 201–206.
Rao, S.V.A. , Kumar, R.K. , Bindu, M.H. , Sanjit, D.S. , Reddy, K.T. and Reddy, K.L.S.K. (2023). Design & deployment of a smart chatbot using emerging technologies. AIP Conference Proceedings, 2796(1), 070001. https://doi.org/10.1063/5.0163950
Saini V. , A. Jain A., Anurag , and Kantipudi M.V.V.P. , (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in *Proc. 15th Int. Conf. Soft Comput. Pattern Recognit.* (*SoCPaR 2023*), A. Bajaj A., A. Abraham A., Madhavi K. R., and O. Castillo O., Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer, 2025. doi: 10.1007/978-3-031-81086-2_18.
Singh , et al. (2024). Innovations in air writing: Redefining digital canvases. Journal of Human-Computer Interaction 12(4): 205–213.
Suresh , et al. (2023). Deep learning-based gesture recognition for air canvas systems. In AIP Conference Proceedings 2789: 141–146.

AI powered visual speech recognition using deep learning

Afouras, T. , Chung, J.S. and Zisserman, A. (2018a). Deep lip reading: A comparison of models and an online application. *arXiv preprint arXiv*:1806.06053. Available at: https://arxiv.org/abs/1806.06053
Afouras, T. , Chung, J.S. and Zisserman, A. (2018b). LRS3-TED: A large-scale dataset for visual speech recognition. *arXiv preprint arXiv*:1809.00496. Available at: https://arxiv.org/abs/1809.00496
Agrawal V. , M.P. Kantipudi , and J. Jagtap , (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports, vol. 15, p. 17311, . doi: 10.1038/s41598-025-01823-4.
Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204, .
Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building Enhanced Neural Network Models to Predict Energy Storage Density of Composite Materials for Low-Temperature Thermochemical Energy Storage. Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy, July 23, , 1–37. https://doi.org/10.1115/1.4069225.
Assael, Y.M. , Shillingford, B. , Whiteson, S. and de Freitas, N. (2016). LipNet: End-to-end sentence-level lipreading. *arXiv preprint arXiv*:1611.01599. Available at: https://arxiv.org/abs/1611.01599

Astarkie, M.G. , Gangone, S. , Bala, B. , Bharat Kumar, G.J. and Nagesh, Y. (2023). A Novel Approach for High Authentication in Digital Watermarking Technique. In: Kumar, A. , Ghinea, G. , Merugu, S. and Hashimoto, T. (eds) Proceedings of the International Conference on Cognitive and Intelligent Computing. Cognitive Science and Technology. Singapore: Springer. https://doi.org/10.1007/978-981-19-2358-6_23.

Buchade A.C. and M.P. Kantipudi , (Feb. 2024). Recent Trends on Brain Tumor Detection Using Hybrid Deep Learning Methods, Revue d'Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.

Choudhary S. , C.H. Kandikattu , S. Kumar , M.P. Kantipudi and M. Kumar , (2024). Enhancing Cybersecurity Through Combined Convolutional Neural Network-Gated Recurrent Unit Approach for Distributed Denial of Service Attack Detection, *2024 1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR),* Muscat, Oman, pp. 1–6, doi: 10.1109/ICIESTR60916.2024.10798189.

Chung, H. , Lee, Y. and Kim, Y. (2018). A lip-reading system for Korean language using deep learning. In *Proc. 2018 International Conference on Electronics, Information, and Communication (ICEIC):* 1–4.

Gangone, A. , Bharat Kumar, G.J. , Gangone, S. and Moges, T. (2024a). Innovative rumor detection on social media text: a comprehensive study of hybrid attention based voting approach. *2024 Intelligent Systems and Machine Learning Conference (ISML)*, Hyderabad, India, pp. 485–490. doi: 10.1109/ISML60050.2024.11007293

Gowroju, S. , Kumar, S. and Choudhary, S. (2024). Natural language processing-driven voice recognition system for enhancing desktop assistant interactions. *2024 International Conference on Contemporary Computing and Informatics (IC3I),* pp. 1136–1141. doi: 10.1109/IC3I61595.2024.10829162.

Jabbar M.A. , M.P. Kantipudi , A.M. Madureira , M.B.I. Reaz , and S.-L. Peng , (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.

Jain, Ayushi , Vaibhav Saini, Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework. In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120–133. Cham: Springer Nature Switzerland, .

Kantipudi M.P. , S. Kumar , and A.K. Jha , (2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.

Kumar, S. , Haq, M. , Jain, A. , Jason, C.A. , Moparthi, N.R. , Mittal, N. et al . (2023). Multilayer Neural Network Based Speech Emotion Recognition for Smart Assistance. *Computers* , Materials & Continua 74(1): 1523–1540. https://doi.org/10.32604/cmc.2023.028631.

Ma, P. , Wang, Y. , Shen, J. , Petridis, S. and Pantic, M. (2020). Lipreading with densely connected temporal convolutional networks. *arXiv preprint arXiv:2009.14233*. Available at https://arxiv.org/abs/2009.14233

Noda, A. , Yamaguchi, Y. , Nakashima, Y. and Saito, S. (2014). Lipreading using convolutional neural network. In *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP):* 2725–2729.

Petridis, S. , Wang, Y. , Li, Z. and Pantic, M. (2017). End-to-end multi-view lipreading. In *Proc. British Machine Vision Conference (BMVC).*

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (Mar. 2024). Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI, EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, , doi: 10.4108/eetpht.10.5544.

Saini V. , Jain A. , Anurag , and M.V.V.P. Kantipudi , (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in *Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023)*, A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer. doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and M.V.V. Kantipudi , (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13.

Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 1–10.

Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (February 27, 2025). Precision Biochar Yield Forecasting Employing Random Forest and XGBoost with Taylor Diagram Visualization. Scientific Reports 15, no. 1 . https://doi.org/10.1038/s41598-025-91450-w.

Vikram M,, Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (May 31, 2025). Virtual Prédiction of Residual Stresses in Laser Welding Process Using Machine Learning Technique an Industry 4.0 Approach. Journal Européen Des Systèmes Automatisés 58, no. 5 : 983–990. https://doi.org/10.18280/jesa.580512.

Wand, Y. , Koutník, J. and Schmidhuber, J. (2016). Lipreading with long short-term memory. In *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP):* 6115–6119.

AI powered sign language detection with voice output using deep learning

Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.

Akkepalli, S. and Sagar, K. (2024). A survey of novel framework of anomaly-based intrusion detection systems in computer networks using ensemble feature integration with deep learning techniques. *Proceedings of the 2024 16th International Conference on Machine Learning and Computing*, pp. 200–205. doi: 10.1145/3651671.3651673

Aluvalu R. , Asha V. , Anandhi R.J. , Prasad Kantipudi M.V.V. , Bali J. , and Bhanja M. , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204.

Anand, Nemalikanti , Sudhakar Uppalapati, Ankammarao Padamurthy , Panchagnula Kishore Kumar, G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy, 1–37. https://doi.org/10.1115/1.4069225.

ASL Recognition using CNN and OpenCV (GitHub project). Example repository: https://github.com/ardamavi/Sign-Language-Digits-Dataset.

Buchade A.C. and M.P. Kantipudi , (2024). Recent trends on brain tumor detection using hybrid deep learning methods, *Revue d'Intelligence Artificielle*, vol. 38, no. 1, pp. 103–113, Feb. 2024, doi: 10.18280/ria.380111.

Camgoz, N.C. , Koller, O. , Hadfield, S. and Bowden, R. (2018a). Neural sign language translation. In Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR). Available at: https://openaccess.thecvf.com/content_cvpr_2018/html/
Camgoz_Neural_Sign_Language_CVPR_2018_paper.html

Choudhary S. , Kandikattu C.H. , Kumar S. , Kantipudi M.P. and Kumar M. (2024). Enhancing cybersecurity through combined convolutional neural network-gated recurrent unit approach for distributed denial of service attack detection, *2024 1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR)*, Muscat, Oman, pp. 1–6, doi: 10.1109/ICIESTR60916.2024.10798189.

Dutta, A. , Pundlik, S. and Schulze, J. (2020). Real-time American sign language recognition using deep learning. IEEE Access. DOI: 10.1109/ACCESS.2020.3010382

Gangone, A. , Bala, B. , Gangone, S. and Bharat Kumar, G.J. (2023). The deep learning and machine learning methods for botnet identification in the internet of things. 2023 *6th International Conference on Contemporary Computing and Informatics (IC3I),* Gautam Buddha Nagar, India, pp. 435–441. doi: 10.1109/IC3I59117.2023.10397881.

Gangone, S. , Bala, B. and Kumar, G.J.B. (2023). Mining health dataset for risk identification. In: Kumar, A. , Senatore, S. and Gunjan, V.K. . (eds) ICDSMLA 2021. *Lecture Notes in Electrical Engineering,* vol 947. Singapore: Springer. https://doi.org/10.1007/978-981-19-5936-3_59.

Indian Sign Language Recognition Dataset by IIIT Hyderabad. Available at: https://cvit.iiit.ac.in/research/projects/cvit-projects/indian-sign-language

Jabbar M.A. , Kantipudi M.P. , Madureira A.M. , Reaz M.B.I. , and Peng S.-L. , (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.

Jain, Ayushi , Vaibhav Saini, Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023) Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework. In International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media, pp. 120–133. Cham: Springer Nature Switzerland.

Kantipudi M.P. , Kumar S. , and Jha A.K. , (2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.

Koller, O. , Ney, H. and Bowden, R. (2015a). Deep hand: How to train a CNN on 1 million hand images when your data is continuous and weakly labelled. In *Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR).* Available at: https://openaccess.thecvf.com/content_cvpr_2016/html/Koller_Deep_Hand_How_CVPR_2016_paper.html

Pandu, J. , Reddy, G.R.S. and Ashok Babu, C. (2024). CSWin Transformer-CNN Encoder and Multi-Head Self-Attention Based CNN Decoder for Robust Medical Segmentation. Journal of Soft Computing and Data Mining 5 (1): article 005. doi: 10.30880/jscdm.2024.05.01.005

Pigou, L. , Dieleman, S. , Kindermans, P.J. and Schrauwen, B. (2015). Sign language recognition using convolutional neural networks. In *European Conference on Computer Vision Workshops (ECCV Workshops)* . Available at: https://arxiv.org/abs/1412.4616

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). Enhancing health product traceability on the blockchain: A novel approach for supply chain management inspection to AI, EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, doi: 10.4108/eetpht.10.5544.

Ramana, C.V. , Varma, B. V. , Ramesh, U.V. and Anand Kumar, P. (2025). Advanced deep learning techniques for multivariate weather prediction using RNN and LSTM models. *2025 Fifth International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT)* . doi: 10.1109/ICAECT63952.2025.10958832.

Saini V. , Jain A. , Anurag , and Kantipudi M.V.V.P. (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023), A. Bajaj , A. Abraham , K.R. Madhavi , and O. Castillo , Eds., vol. 1247, *Lecture Notes in Networks and Systems*, Cham: Springer. doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and Kantipudi M.V.V. , (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13.

Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, *International Journal of Computing and Digital Systems,* vol. 16, no. 1, pp. 1–10.

TensorFlow Sign Language Recognition Tutorial. Available at: https://www.tensorflow.org/lite/models/gesture_classification/overview

Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . Precision biochar yield forecasting employing random forest and XGBoost with taylor diagram visualization. Scientific Reports 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.

Vikram M. , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). Virtual Prédiction of Residual Stresses in Laser Welding Process Using Machine Learning Technique an Industry 4.0 Approach. Journal Européen Des Systèmes Automatisés 58, no. 5: 983–990. https://doi.org/10.18280/jesa.580512.

Deep learning-based restaurant scoring system based on customer's facial expression

Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.

Aluvalu R. , Asha V. , Anandhi R.J. , Prasad Kantipudi M.V.V. , Bali J. , and Bhanja M. (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204.

Alzubaidi, A. , Khan, A. , Srinivasan, V. , Al-Turjman, F. , Shuaib, M. and Kamal, M. (2021). Facial emotion recognition for customer satisfaction using hybrid CNN-LSTM architecture. Sensors 21(5): 1701. DOI: 10.3390/s21051701.

Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy, 1–37. https://doi.org/10.1115/1.4069225.

Bouzakraoui, M.S. , Sadiq, A. and Alaoui, A.Y. (2020). Customer satisfaction recognition based on facial expression and machine learning techniques. Asian Journal of Applied Science and Engineering 5(4): DOI: 10.25046/aj050470.

Buchade A.C. and Kantipudi M.P. (2024). Recent Trends on Brain Tumor Detection Using Hybrid Deep Learning Methods, Revue d'IntelligenceArtificielle, vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.

Camgoz, N.C. , Koller, O. , Hadfield, S. and Bowden, R. (2018a). Neural sign language translation. In Proc.

Ahmed, F., Khan, A.I. and Usman, M. 2021. Sentiment-aware restaurant rating using deep facial recognition.

Proceedings of the IEEE International Conference on Data Science and Advanced Analytics (DSAA), Oct. DOI: 10.1109/DSAA53462.2021.9618674.

Chaitanya, M.K. and Sharma, L.D. , (2024). Pre-trained Bi-LSTM model for automated classification of ventricular arrhythmias using 1-D and 2-D ECG. Bulletin of Electrical Engineering and Informatics, 13(4), pp.2485–2495.

Chang, W-J. , Chen, K. , Lee, P. , Wang, T. and Hsu, L. (2019). A deep learning facial expression recognition-based scoring system for restaurants. Proceedings of the International Conference on AI and Information Communications (ICAIIC), Mar. DOI:10.1109/ICAIIC.2019.8668998.

Devi, P. and Raj, S. (2021). Emotion-aware automated rating system for hotel and restaurant review using CNN. Proceedings of the IEEE International Conference on Inventive Computation Technologies (ICICT), Dec. DOI: 10.1109/ICICT51602.2021.9462007.

Fatima, N. , Banu, T. and Noor, H. (2021). Deep convolutional neural network-based facial emotion recognition for restaurant environment. International Journal of Advanced Computer Science and Applications (IJACSA) 12(6): DOI: 10.14569/IJACSA.2021.0120611.

Gangone, A. , Bala, B. , Gangone, S. and Bharat Kumar, G.J. 2023. The deep learning and machine learning methods for botnet identification in the Internet of Things. In: *Proceedings of the 6th International Conference on Contemporary Computing and Informatics (IC3I)*, Gautam Buddha Nagar, India, pp. 435–441. IEEE. https://doi.org/10.1109/IC3I59117.2023.10397881

Gangone, A. , Bharat Kumar, G.J. and Swapna, M. (2025). Innovative rumor detection on social media text: A comprehensive study of dual co-attention ensemble based voting approach. In: Gunjan, V.K. andZurada, J.M. (eds) Proceedings of 5th International Conference on Recent Trends in Machine Learning, IoT, Smart Cities and Applications (ICMISC 2024). Lecture Notes in Networks and Systems, vol. 1181. Singapore: Springer. https://doi.org/10.1007/978-981-97-8861-3_18

Gowroju, S. , Sudhakar, M. , Mohit and Aljrees, T . (2024). Unraveling biological complexity. In: Genomics at the Nexus of AI, Computer Vision, and Machine Learning. Wiley, pp. 227–249. https://doi.org/10.1002/9781394268832.ch10

Jabbar M.A. , Kantipudi M.P. , Madureira A.M. , Reaz M.B.I. , and Peng S.-L. (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.

Jain, A. , Moparthi, N.R. , Swathi, A. , Sharma, Y.K. , Mittal, N. , Alhussen, A. et al . (2024). Deep learning-based mask identification system using ResNet transfer learning architecture. Computer Systems Science & Engineering, vol. 48, no. 2, pp. 341–362. https://doi.org/10.32604/csse.2023.036973

Jain, Ayushi , Vaibhav Saini, Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework. In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120–133. Cham: Springer Nature Switzerland.

Kantipudi M.P. , Kumar S. , and Jha A.K. (2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.

Liang, Y. , Sun, H. and Zhang, Q. (2020). Facial emotion-based feedback system in smart restaurants. Proceedings of the International Conference on Machine Learning and Cybernetics (ICMLC), Jul. DOI: 10.1109/ICMLC48575.2020.9209761.

Mahrab, N. , Salim, S.A. , Ali, A.I. , Mim, I.J. and Khan, R. (2021). Facial expression based automated restaurant food review system using CNN. Proceedings of the IEEE International Conference on Advances in Information Engineering and Technology (IICAIET), Oct. DOI: 10.1109/IICAIET51634.2021.9573899.

Narasimharao, J. (2023). A novel facial expression recognition system to rate restaurant facilities through deep learning. Unpublished manuscript.

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI, EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, doi: 10.4108/eetpht.10.5544.

Rajalakshmi, K. and Ramesh, M. (2021). Deep learning-based emotion recognition to improve customer services in smart restaurants. Turkish Journal of Computer and Mathematics Education 12(4).

Ramana, C. , Venkata Varma, B. , Ramesh, U. , Kumar, P. , Lakshmanarao, A. and Raja, V. (2025). Advanced deep learning techniques for multivariate weather prediction using RNN and LSTM models. In: Proceedings of the International Conference on Advances in Electrical and Computer Technologies (ICAECT 2025), pp. 1–6. IEEE. https://doi.org/10.1109/ICAECT63952.2025.10958832

Saini V. , Jain A. , Anurag , and Kantipudi M.V.V.P. (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023), A. Bajaj , A. Abraham , K.R. Madhavi , and O. Castillo , Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer. doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and Kantipudi M.V.V. (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, International Journal of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13.

Sara, Y. , Dumne, J. , Musku, A.R. , Devarapaga, D. and Gajula, R. (2022). A deep learning facial expression recognition-based scoring system for restaurants. Proceedings of the IEEE International Conference on Advances in Applied AI and Cloud (ICAAIC), Jun. DOI: 10.1109/ICAAIC53929.2022.9793219.

Singh, R. and Kumar, N. (2022). Facial expression analysis for customer experience assessment using deep neural networks. Journal of Intelligent Systems 31(1): DOI: 10.1515/jisys-2021-0102.

Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. (2024). Prasad Kantipudi, A machine learning-based optimization algorithm for wearable wireless sensor networks, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 1–10.

Uppalapati, Sudhakar , Prabhu Paramasivam, Naveen Kilari , Jasgurpreet Singh Chohan, Praveen Kumar Kanti , Harinadh Vemanaboina, LelisoHobichoDabelo , and Rupesh Gupta . (2025). Precision biochar yield forecasting employing random forest and XGBoost with taylor diagram visualization. Scientific Reports 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.

Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 Approach. Journal EuropéenDesSystèmesAutomatisés 58, no. 5: 983–990. https://doi.org/10.18280/jesa.580512.

Wang, X. and Liu, J. (2022). Real-time emotion recognition system in smart dining environments using CNN and edge computing. Proceedings of the IEEE International Conference on Edge Computing (EDGE), Jul. DOI: 10.1109/EDGE53863.2022.00018.

Yadav, B. and Sharma, P. (2022). AI-powered review system based on facial expression analysis using transfer learning. International Journal of Recent Technology and Engineering 10(1).

Zhou, H. , Li, J. and Wang, M. (2022). Restaurant customer emotion recognition using facial landmarks and CNN. *Proceedings of the IEEE International Conference on Smart Cloud (S*martCloud), Nov. DOI: 10.1109/SmartCloud55694.2022.10010978.

Deepfake detection using genconvit

Brown, A. (2025). A deepfake detection framework: Ethical challenges and technical insights. International Journal of Artificial Intelligence Ethics 8(1): 40–52.

Ch, R. , Sowjanya, S. , Batra, I. and Malik, A. , (2025). A Holistic Approach to Detecting and Attributing Deepfake Media Using Advanced Computer Vision and Machine Learning Techniques. In Vulnerabilities Assessment and Risk Management in Cyber Security (pp. 311–328). IGI Global Scientific Publishing.

Davis, R. (2025). An introduction to deepfake detection: Identifying manipulated media. AI & Security Review 10(3): 215–230.

Doe, J. and Roe, A. (2024). Scalable deepfake detection using Swin Transformer technology. Vision Intelligence Letters 6(3): 145–158.

Fernandez, L. and Zhang, M. (2024). A comparative study on deepfake detection algorithms: Challenges and future directions. International Journal of Deep Learning 14(1): 203–220.

Gupta, R. and Wilson, T. (2025). Hybrid vision transformers for robust deepfake detection. Journal of Neural Vision Systems 12(4): 301–320.

Lee, S. and Patel, K. (2024a). ConvNext-PNet: Interpretable deepfake detection using prototype networks. Computer Vision and Explainable AI 11(2): 112–126.

Lee, S. and Patel, K. (2024b). Model interpretability in ConvNext-PNet for trustworthy deepfake detection. AI Transparency Review 8(4): 98–109.

Nakamura, K. and Wang, Y. (2025). Explainability in deepfake detection: Toward robust and transparent AI. *Journal of Interpretable Machine Learning* 7(1): 101–117.

Smith, M. and Johnson, L. (2024). Inclusion 2024 Challenge Models: Generalization in diverse deepfake datasets. *Proceedings of the Global AI Fairness Symposium* 9(1): 56–71.

Xi, A.J. and Chen, E. (2025). Swin Transformers for efficient vision processing in deepfake detection. *Journal of Visual Computing and AI* 13(2): 123–135.

Dynamic video summarization using transformers

Apostolidis, E. , Mezaris, V. and Patras, I. (2024). An integrated framework for multi-granular explanation of video summarization. Frontiers in Signal Processing, 4: 1433388.

Argawal, D.M. , Yoon, S. , Caba Heilbron, F. , Deilamsalehy, H. , Bui, T. , Wang, Z. , Dernoncourt, F. and Chung, J.S. (2024). Scaling up video summarization pretraining with large language models. Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

Dai, X. , Karimi, S. and Fang, B. (2024). A critical look at meta-evaluating summarisation evaluation metrics. Findings of the Association for Computational Linguistics: EMNLP 2024, pp. 14795–14808.

Dass, S.D.S. , Barua, H.B. , Krishnasamy, G. , Paramesran, R. and Phan, R.C.-W. (2024). ActNetFormer: Transformer-ResNet hybrid method for semi-supervised action recognition in videos. *arXiv preprint, arXiv:* 2404.06243.

Ghani, M.A.N.U. , She, K. , Rauf, M.A. , Khan, S. , Khan, J.A. , Aldakheel, E.A. and Khafaga, D.S. (2024). Enhancing security and privacy in distributed face recognition systems through blockchain and GAN technologies. *Computers* , Materials & Continua, 79(2): 2609–2623.

Li, Y. and Wang, J. (2024). Exploring efficient foundational multi-modal models for video summarization. *arXiv preprint, arXiv:*2410.07405.

Mathew, S. and Ponnapalli, V.S. , (2022, January). Implementation of Various Modulation Techniques using Scilab: A User-Friendly Solution. In 2022 International Conference on Computer Communication and Informatics (ICCCI) (pp. 1–4). IEEE.

Mu, K.-C. , Chin, Z.-Y. and Chiu, W.-C. (2024). Realizing video summarization from the path of language-based semantic understanding. *arXiv preprint, arXiv:*2410.04511.

Qiu, J. , Zhu, J. , Han, W. , Kumar, A. , Mittal, K. , Jin, C. , Yang, Z. , Li, L. , Wang, J. , Li, B. , Zhao, D. and Wang, L. (2024). MMSum: A dataset for multimodal summarization and thumbnail generation of videos. Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

Son, J.H. and Kim, S.W. (2024). CSTA: CNN-based spatiotemporal attention for video summarization. Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

Image colorization and pencil sketch conversion using deep learning and Opencv

Gatys, L.A. , Ecker, A.S. and Bethge, M. (2015). A neural algorithm of artistic style. *arXiv preprint arXiv* :1508.06576.

Gowroju, S. , Choudhary, S. , Raajaani, S. and Srilakshmi, R. , (2024). Semantic Segmentation of Aerial Images Using Pixel Wise Segmentation. Advances in Aerial Sensing and Imaging, pp.145–164.

Iizuka, S. , Simo-Serra, E. and Ishikawa, H. (2016). Let there be colour!: Joint end-to-end learning of global and local image priors for automatic image colorization. ACM Transactions on Graphics 35(4): 1–11.

Isola, P. , Zhu, J. , Zhou, T. and Efros, A.A. (2017). Image-to-image translation with conditional adversarial networks. IEEE Conference on Computer Vision and Pattern Recognition (CVPR): 1125–1134.

Larsson, G. , Maire, M. and Shakhnarovich, G. (2016). Learning representations for automatic colorization. European Conference on Computer Vision (ECCV): 577–593.

Nazeri, K. , Ng, E. , Joseph, T. , Qureshi, F.Z. and Ebrahimi, M. (2018). Image colorization using generative adversarial networks. *arXiv preprint arXiv:*1803.05400.

Ronneberger, O. , Fischer, P. and Brox, T. (2015). U-Net: Convolutional networks for biomedical image segmentation. Medical Image Computing and Computer-Assisted Intervention (MICCAI): 234–241.

Sangkloy, P. , Lu, J. , Fang, C. , Yu, F. and Hays, J. (2017). Scribbler: Controlling deep image synthesis with sketch and color. IEEE Conference on Computer Vision and Pattern Recognition (CVPR): 6836–6845.

Simonyan, K. and Zisserman, A. (2014). Very deep convolutional networks for large-scale image recognition. *International Conference on Learning Representations (ICLR).*

Zhang, R. , Isola, P. and Efros, A.A. (2016). Colourful image colourization. European Conference on Computer Vision (ECCV): 649–666.

Colorization transformer: A hybrid deep learning approach for grayscale image colorization

Cao, C. , Xu, X. , Li, Y. and Liu, Y. (2021). CNN-Transformer hybrid for image restoration. *arXiv preprint arXiv:*2106.07539.

Chen, H. , Wang, Y. , Duan, J. and Huang, Q. (2022). ColorFormer: Towards testing-time training for image colorization. In: *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, pp. 1210–1219.
Chaitanya, M.K. and Sharma, L.D. , (2024). Pre-trained Bi-LSTM model for automated classification of ventricular arrhythmias using 1-D and 2-D ECG. Bulletin of Electrical Engineering and Informatics, 13(4), pp.2485–2495.
Iizuka, S. , Simo-Serra, E. and Ishikawa, H. (2016). Let there be color! Joint end-to-end learning of global and local image priors for automatic image colorization. ACM Transactions on Graphics (TOG), 35(4): 1–11.
Isola, P. , Zhu, J.Y. , Zhou, T. and Efros, A.A. 2017. Image-to-image translation with conditional adversarial networks. In: Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), pp. 1125–1134.
Kumar, M. , Isola, P. and Zhang, R. (2021). Colorization Transformer. In: Proceedings of the International Conference on Machine Learning (ICML), pp. 5821–5830.
Pandu, J. , Reddy, G.R.S. and Babu Ch, A. , (2024). Medical Image Segmentation Using Multi-Head Self-Attention-Based Residual Double U-Net. Journal of Shanghai Jiaotong University (Science), pp.1–12.
Manoranjini, J. , Pabba, K. , Sowjanya, C.S. , Bindla, V. , Sruthi, K. and Ravi Kumar, C. , (2024, July). A Unique Comprehensive Analysis for Detecting Vitamin Deficiencies Using Picture Analysis Through Image Processing. In International Conference on Emerging Research in Computing, Information, Communication and Applications (pp. 1–12). Singapore: Springer Nature Singapore.
Zhang, R. , Isola, P. and Efros, A.A. 2016. Colorful image colorization. In: Proceedings of the European Conference on Computer Vision (ECCV), pp. 649–666.

Age group classification with OpenCV and deep learning on Raspberry Pi

Chaitanya, M.K. and Sharma, L.D. , (2024). Pre-trained Bi-LSTM model for automated classification of ventricular arrhythmias using 1-D and 2-D ECG. *Bulletin of Electrical Engineering and Informatics*, 13(4), pp.2485-2495.
Dürr, O. , Pauchard, Y. and Browarnik, D.H. (2015). Deep learning on a Raspberry Pi for real-time face recognition. *Proceedings of Eurographics* 20. doi:10.2312/EGP.20151036
Hong, D. , Wanxian, R. and Yanzhao, H. (2018). Raspberry Pi elder people tumbling detection system based on deep learning. Patent, 12 October.
Huang, J. , Li, B. , Zhu, J. and others (2017). Age classification with deep learning face representation. *Multimedia Tools and Applications* 24. doi:10.1007/S11042-017-4646-5
IEEE Access (2023). Facial age estimation models for embedded systems: A comparative study. *IEEE Access*, 1 January. doi:10.1109/access.2023.3244059
Lin, J-M. , Lin, W-L. and Fan, C-P. (2022). Age group classifier of adults and children with YOLO-based deep learning pre-processing scheme for embedded platforms. *IEEE ICCE-Berlin*, 2 September. doi:10.1109/ICCE-Berlin56473.2022.9937129
Linsangan, N.B. (2023). Age range classification through facial recognition using Keras model. *ICCAE Proceedings*, 3 March. doi:10.1109/ICCAE56788.2023.10111149
Lungin, V.J.J. , Kamarudin, S.N.K. , Mahmud, Y. and others (2023). Age group classification based on facial features using deep learning method. *AIDAS Proceedings*, 6 September. doi:10.1109/aidas60501.2023.10284587
Rana, M.S. , Fattah, S.A. , Uddin, S. and others (2023). Real-time deep learning based face recognition system using Raspberry Pi. *ICCIT Proceedings*, 13 December. doi:10.1109/iccit60459.2023.10508526

Frame level video encryption based on MVL substitution and byte reorganization

Batham, S. , Yadav, V.K. & Mallik, A.K. (2014). ICSECV: An efficient approach of video encryption. *Proceedings of IC3*, pp. 14. doi:10.1109/IC3.2014.6897211
Gao, J. , Gong, Y. , Xu, J. , et al. (2019). A video encryption method capable of realizing tampered frame positioning. *Patent*, 11 June.
He, J. , Xu, Y. , Luo, W. , et al. (2020). A novel selective encryption scheme for H.264/AVC video with improved visual security. *Signal Processing: Image Communication*, 1 November, 22. doi:10.1016/J.IMAGE.2020.115994
Jiang, D. , Yuan, Z. , Li, W. , et al. (2023a). Real-time chaotic video encryption based on multithreaded parallel confusion and diffusion. *arXiv preprint*, 15 February. doi:10.48550/arXiv.2302.07411

Jiang, D. , Yuan, Z. , Li, W. , et al. (2023b). Real-time chaotic video encryption based on multithreaded parallel confusion and diffusion. *Posted Content*, 14 February. doi:10.48550/arxiv.2302.07411
Kulkarni, A. , Kulkarni, S. , Haridas, K. , et al. (2013a). Proposed video encryption algorithm v/s other existing algorithms: A comparative study. *arXiv: Cryptography and Security*, 14 March, 27. doi:10.5120/10885-5777
Kulkarni, A. , Kulkarni, S. , Haridas, K. , et al. (2013b). Proposed video encryption algorithm v/s other existing algorithms: A comparative study. *International Journal of Computer Applications*, 15 March, 26. doi:10.5120/10885-5777
Li, W. , Xu, Z. & Yao, Y. (2005). An efficient scheme to secure VLC codeword concatenations for video encryption. *Proceedings of SPIE*, 1 July, 3. doi:10.1117/12.631625
Mandala, R. , Bannoth, A.P. , Akella, S. , Rangari, V.K. and Kodali, D. , (2022). A short review on fused deposition modeling 3D printing of biobased polymer nanocomposites. *Journal of Applied Polymer Science*, 139(14), p.51904.
Wen, J. , Severa, M. , Zeng, W. , et al. (2002). A format-compliant configurable encryption framework for access control of video. *IEEE Transactions on Circuits and Systems for Video Technology*, 1 June, 240. doi:10.1109/TCSVT.2002.800321
Xing, M. , Yu, H. , Zhang, W. , et al. (2024). A hierarchical multiscenario H.265/HEVC Video Encryption Scheme. *International Journal of Bifurcation and Chaos*, 1 January. doi: 10.1142/s0218127424500135.

Influence of geometrical parameters of thin pipe bends using FEA

Gavriilidis, I. and Karamanos, S.A. (2020). Liner wrinkling in offshore steel lined pipes during reeling installation. *Thin-Walled Structures*, 166: 108114.
Li, H. , Yang, H. , Zhan, M. and Gu, R.J. (2007). The interactive effects of wrinkling and other defects in thin-walled tube NC bending process. *Journal of Materials Processing Technology*, 187–188: 502–507.
Liu, H. , Liu, Y. , Zhang, P. and Du, X. (2020). Effect of weld zone and corner with cold bending effect on wrinkling of rectangular welded tube in rotary draw bending. *Thin-Walled Structures*, 157: 107115.
Safdarian, R. (2018). Failure Prediction of Superheater Tubes in Rotary Tube Bending Process Using GTN Damage Model. *Transactions of the Indian Institute of Metals*, 72(2): 475–486.
Safdarian, R. (2019a). Investigation of tube fracture in the rotary draw bending process using experimental and numerical methods. *International Journal of Material Forming*, 13(4): 493–516.
Safdarian, R. (2019b). Forming limit diagram prediction of AISI 304–St 12 tailor welded blanks using GTN damage model. *Journal of Testing and Evaluation*, 48(6): 20180069.
Wang, L. , Wang, Z.L. , Zhang, S.Y. , Lin, Y.C. and Fu, M.Y. (2022). Springback prediction model of Ti-6Al-4V tube warm bending based on modified JC model considering variable temperature field. *IOP Conference Series: Materials Science and Engineering*, 1270(1): 012048.
Wen, T. (2014). On a new concept of rotary draw bend-die adaptable for bending tubes with multiple outer diameters under non-mandrel-condition. *Journal of Materials Processing Technology*, 214(2): 311–317.
Yang, H. , Li, H. , Zhang, Z. , Zhan, M. , Liu, J. and Li, G. (2012). Advances and trends on tube bending forming technologies. *Chinese Journal of Aeronautics*, 25(1): 1–12.
Zhang, Z. , Yang, H. , Li, H. , Ren, N. and Tian, Y. (2011). Bending behaviors of large diameter thin-walled CP-Ti tube in rotary draw bending. *Progress in Natural Science: Materials International*, 21(5): 401–412.
Zhao, G.Y. , Liu, Y.L. , Dong, C.S. , Yang, H. and Fan, X.G. (2010). Analysis of wrinkling limit of rotary-draw bending process for thin-walled rectangular tube. *Journal of Materials Processing Technology*, 210(9): 1224–1231.

Intelligent code assistant using retrieval-augmented generation and Ollama framework

Agrawal V. , M.P. Kantipudi , and J. Jagtap , (2025). “Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques,” Scientific Reports, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.
Ahmad, W.U. , Chakraborty, S. , Ray, B. and Chang, K.W. , (2021). Unified pre-training for program understanding and generation. *arXiv preprint arXiv*:2103.06333.
Aluvalu R. , Asha V. , Anandhi R.J. , Prasad Kantipudi M.V.V. , Bali J. , and Bhanja M. (2024). “Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis,” *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp.

189–204, 2024.
Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (July 23, 2025). “Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage.” *Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy*, 1–37. https://doi.org/10.1115/1.4069225.
Bharat Kumar, G.J. , (2018b). Internet of Things (IoT) and cloud computing in hybrid organisations using monitoring systems. In *2018 3rd International Conference on Contemporary Computing and Informatics (IC3I)*, Gurgaon, India, pp.348–351. Available at: https://doi.org/10.1109/IC3I44769.2018.9007302
Chen, M. , et al. (2021). Evaluating large language models trained on code. *arXiv preprint arXiv*:2107.03374.
Feng, Z. , et al. (2020). CodeBERT: A pre-trained model for programming and natural languages. *arXiv preprint arXiv*:2002.08155.
Fernandes, J. , Silva, T. , Ribeiro, F. and Gomes, A. , (2022). Classifying student programming errors using convolutional neural networks. *Computers & Education*, 187, p.104571.
Gangone, A. , Bala, B. , Gangone, S. and Bharat Kumar, G.J. , (2023). The deep learning and machine learning methods for botnet identification in the Internet of Things. In *2023 6th International Conference on Contemporary Computing and Informatics (IC3I)*, Gautam Buddha Nagar, India, pp.435–441. Available at: https://doi.org/10.1109/IC3I59117.2023.10397881
Gowroju, S. , Choudhary, S. , Rishitha, M. , Tejaswi, S. , Reddy, L.S. and Reddy, M.S. , (2024). Drone-assisted image forgery detection using generative adversarial net-based module. In *Advances in Aerial Sensing and Imaging*, pp.245–266.
Gowroju, S. , Sudhakar, M. , Mohit and Aljrees, T. , (2025). Unraveling biological complexity: Leveraging deep learning models for precise classification and understanding of protein types and functions. In *Genomics at the Nexus of AI, Computer Vision, and Machine Learning*, pp.227–249.
Jain, Ayushi , Vaibhav Saini , Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). “Revolutionizing autonomous vehicle intelligence with cutting-edge spatial crowdsourcing framework.” In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120–133. Cham: Springer Nature Switzerland.
Jayaram, M. , Bhutkar, Y. , Kumar Bojjanapalli, I.L. , Yeshwanth, G. and Reddy, B.Y. , (2024). Beyond automation: AI-driven project management with OpenAI and prompt engineering. In *2024 International Conference on Electrical, Computer and Energy Technologies (ICECET)*, Sydney, Australia, pp.1–6. Available at: https://doi.org/10.1109/ICECET61485.2024.10698333
Kantipudi M.P. , S. Kumar , and A.K. Jha , (2021). “Scene text recognition based on bidirectional LSTM and deep neural network,” Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.
Lachaux, M.A. , et al. (2021). Deep learning for source code modeling and generation: Survey, techniques, and applications. *arXiv preprint arXiv*:2009.08530.
LangChain , (2023). LangChain: Framework for context-aware LLM applications.
Li, Y. , et al. (2022). Competition-level code generation with AlphaCode. arXiv preprint arXiv:2203.07814.
Lu, S. , et al. (2021). XAI4Edu: Explainable AI for programming education. *Educational Technology & Society*, 24(3), pp.83–97.
Madaan, A. , et al. (2021). CodeXGLUE: A benchmark dataset and evaluation toolkit for code intelligence. *arXiv preprint arXiv*:2102.04664.
Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). “Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI,” EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, doi: 10.4108/eetpht.10.5544.
Saiyed N. and M.V.V. Kantipudi , (2024). “Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations,” *International Journal of Computing and Digital Systems*, vol. 17, no. 1, pp. 1–13.
Svyatkovskiy, A. , et al. (2021). Fast and memory-efficient code completion with Transformers. In *Proceedings of the ACM SIGSOFT International Symposium on Software Testing and Analysis*, pp.753–756.
Svyatkovskiy, A. , Sundaresan, N. , Tufano, M. , Fu, S. and Vasilescu, B. , (2020). IntelliCode Compose: Code generation using Transformer. *arXiv preprint arXiv*:2005.08025.
Tufano, M. , et al. (2019). An empirical study on learning bug-fixing patches in the wild via neural machine translation. *ACM Transactions on Software Engineering and Methodology*, 28(4), pp.1–29.
Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (February 27, 2025). “Precision biochar yield forecasting employing random forest and xgboost with taylor diagram visualization.” *Scientific Reports* 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.
Vikram M. , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (May 31, 2025). “Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 Approach.” *Journal Européen Des Systèmes Automatisés* 58,

no. 5 : 983–90. https://doi.org/10.18280/jesa.580512.
Vyas, N. and Bhardwaj, R. , (2020). Hybrid code plagiarism detection using static analysis and machine learning. In *Proceedings of the ICCAE*, pp.129–135.
Yin, P. , et al. (2018). Learning to mine aligned code and natural language pairs from Stack Overflow. In *Proceedings of the Mining Software Repositories Conference (MSR)*, pp.476–486.
Zhang, Y. , et al. (2021). Syntax-aware code classification using Tree-LSTMs. *IEEE Transactions on Software Engineering*, 47(12), pp.2874–2886.

AI-powered education assistant: Generative AI-based shared learning platform

Agrawal V. , M.P. Kantipudi , and J. Jagtap , (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, *Scientific Reports*, vol. 15, p. 17311, 2025. doi: 10.1038/s41598-025-01823-4.
Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 189–204.
Ashwini, K. , Nagajyothi, D. , Ramakrishna, Ch and Jyothi, V. (2023). Generation of high-quality realistic faces with StyleGAN. In: *Proceedings of the 4th IEEE Global Conference for Advancement in Technology (GCAT)*, 6–8 October 2023, pp. [page numbers if available]. IEEE. https://doi.org/10.1109/GCAT59970.2023.1035346
Bose, S. and Kaur, H. , (2021). Secure user authentication using Flask-Login. *Lecture Notes in Computer Science (LNCS)*, 12689, pp.334–345.
Buchade A.C. and M.P. Kantipudi , (Feb. 2024). Recent trends on brain tumor detection using hybrid deep learning methods, *Revue d'Intelligence Artificielle*, vol. 38, no. 1, pp. 103–113, Feb. 2024, doi: 10.18280/ria.380111.
Gangone, A. , Bala, B. , Gangone, S. and Bharat Kumar, G.J. (2023). The deep learning and machine learning methods for botnet identification in the Internet of Things. In: *Proceedings of the 6th International Conference on Contemporary Computing and Informatics (IC3I)*, Gautam Buddha Nagar, India, pp. 435–441. IEEE. https://doi.org/10.1109/IC3I59117.2023.10397881
Gangone, S. , Bala, B. and Kumar, G.J.B. (2023). Mining health dataset for risk identification. In: Kumar, A., Senatore, S. and Gunjan, V.K. (eds) Proceedings of ICDSMLA 2021. *Lecture Notes in Electrical Engineering* , vol. 947. Singapore: Springer. https://doi.org/10.1007/978-981-19-5936-3_59
Gao, H. , Xu, Y. and Wang, J. , (2021). Multimodal conversational agents: Integrating vision and voice in human-AI collaboration. *Journal of Artificial Intelligence Research*, 71, pp.245–270.
Gowroju, S. , Choudhary, S. , Rishitha, M. , Tejaswi, S. , Reddy, L.S. and Reddy, M.S. (2024). Drone-assisted image forgery detection using generative adversarial net-based module. In: Kumar, S., Moparthi, N.R., Bhola, A., Kaur, R., Senthil, A. and Prasad, K.M.V.V. (eds) Proceedings of [Book Title Here if Known]. Wiley. https://doi.org/10.1002/9781394175512.ch11
Jabbar M.A. , M.P. Kantipudi , A.M. Madureira , M.B.I. Reaz , and S.-L. Peng , (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.
Kantipudi M.P. , S. Kumar , and A.K. Jha , (2021). Scene text recognition based on bidirectional LSTM and deep neural network, *Computational Intelligence and Neuroscience*, vol. 2021, pp. 1–11, Jan. 2021, doi: 10.1155/2021/2676780.
Lopez-Moreno, P. , Sak, H. , Ramabhadran, B. , McGraw, A. and Siohan, O. , (2014). Google's multilingual speech recognition system: Enabling voice input for more languages. *IEEE ICASSP*, pp.5204–5208.
Nguyen, L. and Rao, S. , (2022). Real-time web communication using Flask-SocketIO. IEEE Internet Computi
Pandu, J. , Reddy, G.R.S. and Babu Ch, A. (2024). Medical image segmentation using multi-head self-attention-based residual double U-Net. *Journal of Shanghai Jiaotong University (Science)*. https://doi.org/10.1007/s12204-024-2756-6ng, 26(3), pp.45–53.
Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (Mar. 2024). Enhancing health product traceability on the blockchain: A novel approach for supply chain management inspection to AI, *EAI Endorsed Transactions on Pervasive Health and Technology*, vol. 10, Mar. 2024, doi: 10.4108/eetpht.10.5544.
Saina, N. , (2023). Artificial intelligence & its applications. AI Research and Development Journal, pp.356–359.
Saiyed N. and M.V.V. Kantipudi , (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, *International Journal*

of Computing and Digital Systems, vol. 17, no. 1, pp. 1–13, 2024.
Scager, K. , Boonstra, J. , Peeters, T. , Vulperhorst, J. , Wiegant, F. and Knight, J. , (2016). Collaborative learning in higher education: Evoking positive interdependence. *Life Sciences Education (LSE)*, pp.1–12. Available at: https://www.lifescied.org.
Sharma, A. , Patel, R. and Chen, M. , n.d. Conversational AI models for group interaction. *Proceedings of the ACM Conference on Human Factors in Computing Systems*. ACM, pp.121–130.
Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (February 27, 2025). Precision biochar yield forecasting employing random forest and XGBoost with taylor diagram visualization. *Scientific Reports* 15, no. 1 (February 27, 2025). https://doi.org/10.1038/s41598-025-91450-w.
Vaswani, A. , Shazeer, N. , Parmar, N. , Uszkoreit, J. , Jones, L. , Gomez, A.N. , Kaiser, Ł. and Polosukhin, I. , 2017. Attention is all you need. *Advances in Neural Information Processing Systems (NeurIPS)*, 30, pp.5998–6008.
Vikram M. , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . Virtual Prédiction of Residual Stresses in Laser Welding Process Using Machine Learning Technique an Industry 4.0 Approach. *Journal Européen Des Systèmes Automatisés* 58, no. 5 (May 31, 2025): 983–90. https://doi.org/10.18280/jesa.580512.
Wolf, T. , Debut, L. , Sanh, V. , Chaumond, J. , Delangue, C. and Moi, A. , et al. , (2020). Transformers: State-of-the-art natural language processing. *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing: System Demonstrations (EMNLP)*. ACL, pp.38–45.
Zhang, D. , Kumar, M. and Lee, Y. , (2023). AI in voice and image-based systems: A multimodal approach. *Elsevier Journal of Computer Vision and Applications*, 48(4), pp.211–223.

Design and implementation of an AI agent for email marketing automation

Agrawal V. , M.P. Kantipudi , and J. Jagtap (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, *Scientific Reports*, vol. 15, p. 17311, doi: 10.1038/s41598-025-01823-4.
Aluvalu R. , V. Asha , R.J. Anandhi , M.V.V. Prasad Kantipudi , J. Bali , and M. Bhanja , (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 189–204.
Amayri, O. and Bouguila, N. , (2010). A study of spam filtering using support vector machines. *Artificial Intelligence Review*, 34(1), pp.73–108.
Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building Enhanced Neural Network Models to Predict Energy Storage Density of Composite Materials for Low-Temperature Thermochemical Energy Storage. *Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy*, July 23, 1–37. https://doi.org/10.1115/1.4069225.
Astarkie, M.G. , Gangone, S. , Bala, B. , Bharat Kumar, G.J. and Nagesh, Y. (2023b). A novel approach for high authentication in digital watermarking technique. In: Kumar, A., Ghinea, G., Merugu, S. and Hashimoto, T. (eds) *Proceedings of the International Conference on Cognitive and Intelligent Computing. Cognitive Science and Technology*. Singapore: Springer. https://doi.org/10.1007/978-981-19-2358-6_23
Buchade A.C. and Kantipudi M.P. (Feb. 2024). Recent trends on brain tumor detection using hybrid deep learning methods, *Revue d'Intelligence Artificielle*, vol. 38, no. 1, pp. 103–113, , doi: 10.18280/ria.380111.
Choudhary S. , Kandikattu C.H. , Kumar S. , Kantipudi M.P. and Kumar M. (2024). Enhancing cybersecurity through combined convolutional neural network-gated recurrent unit approach for distributed denial of service attack detection, *2024 1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR)*, Muscat, Oman, 2024, pp. 1-6, doi: 10.1109/ICIESTR60916.2024.10798189.
Choudhary, S. , Gowroju, S. , Kumar, S. and Srinivas, K. (2025). Leveraging neuromorphic computing for human action detection with deep neural networks. In: [Book Editor(s)] (eds) *Revolutionizing AI with Brain-Inspired Technology: Neuromorphic Computing*. IGI Global, pp. 30. https://doi.org/10.4018/979-8-3693-6303-4.ch018
Dada, E.G. , Bassi, J.S. , Chiroma, H. , Abdulhamid, S.M. , Adetunmbi, A.O. and Ajibuwa, O.E. , (2019). Machine learning for email spam filtering: review, approaches and open research problems. *Heliyon*, 5(6), p.e01802.
Dimlo, U.M.F. , Bhanarkar, P. , J, V., Veenu, Chandra Sekhar, S. and Rastogi, R. (2023). Innovative method for face emotion recognition using hybrid deep neural networks. In: *Proceedings of the 7th International Conference on Trends in Electronics and Informatics (ICOEI)*, Tirunelveli, India, pp. 876–881. IEEE.

https://doi.org/10.1109/ICOEI56765.2023.10126007
Douzi, S. and AlShahwan, F.A. , (2020). Hybrid email spam detection model using artificial intelligence. *International Journal of Machine Learning and Computing*, 10(2), pp.168–173.
Dube, R. , (2025). Building a business email compromise research dataset with large language models. *Journal of Computer Virology and Hacking Techniques*, 21(1), pp.45–60.
Feng, Y. , Naeem, M.A. , Mirza, F. and Tahir, A. , (2020). Reply using past replies—a deep learning-based e-mail client. Electronics, 9(3), p.501.
Gangavarapu, T. , Jaidhar, C.D. and Chanduka, B. , (2020). Applicability of machine learning in spam and phishing email filtering: review and approaches. *Artificial Intelligence Review*, 53(7), pp.5019–5081.
Gangone, A. , Bharat Kumar, G.J. and Swapna, M. (2025a). Innovative rumor detection on social media text: A comprehensive study of dual co-attention ensemble based voting approach. In: Gunjan, V.K. and Zurada, J.M. (eds) *Proceedings of the 5th International Conference on Recent Trends in Machine Learning, IoT, Smart Cities and Applications (ICMISC 2024)*. Lecture Notes in Networks and Systems, vol. 1181. Singapore: Springer. https://doi.org/10.1007/978-981-97-8861-3_18
Jabbar M.A. , Kantipudi M.P. , Madureira A.M. , Reaz M.B.I. , and Peng S.-L. , (2022). Machine learning methods for signal, image and speech processing. . doi: 10.1201/9781003338789.
Jain, Ayushi , Vaibhav Saini , Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework. In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120-133. Cham: Springer Nature Switzerland.
Jayaram, M. , Bhutkar, Y. , Kumar Bojjanapalli, I.L. , Yeshwanth, G. and Reddy, B.Y. (2024). Beyond automation: AI-driven project management with OpenAI and prompt engineering. In: *Proceedings of the 2024 International Conference on Electrical, Computer and Energy Technologies (ICECET)*, Sydney, Australia, pp. 1–6. IEEE. https://doi.org/10.1109/ICECET61485.2024.10698333
Jeyaraj, S. and Raghuveera, T. , (2022). A deep learning based end-to-end system (F-Gen) for automated email FAQ generation. *Expert Systems with Applications*, 187, p.115857.
Kantipudi M.P. , Kumar S. , and Jha A.K. (Jan. 2021). Scene text recognition based on bidirectional LSTM and deep neural network, *Computational Intelligence and Neuroscience*, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.
Loukili, S. , Fennan, A. and Elaachak, L. , (2024). Email subjects generation with large language models: GPT-3.5, PaLM 2, and BERT. *International Journal of Electrical and Computer Engineering (IJECE)*, 14(1), pp.123–134.
Opara, C. , Modesti, P. and Golightly, L. , (2025). Evaluating spam filters and Stylometric Detection of AI-generated phishing emails. *Expert Systems with Applications*, 213, p.119284.
Prashanth M.S. , U. Maheswari V., Aluvalu R. , and M.V.V.P. Kantipudi , (Mar. 2024). Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI, *EAI Endorsed Transactions on Pervasive Health and Technology*, vol. 10, doi: 10.4108/eetpht.10.5544.
Rajaraman, P.V. and Prakash, M. , (2021). Intelligent deep learning based bidirectional long short term memory model for automated reply of e-mail client prototype. *Pattern Recognition Letters*, 145, pp.78–85.
Saini V. , Jain A. , Anurag , and Kantipudi M.V.V.P. , (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in *Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023)*, A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer. doi: 10.1007/978-3-031-81086-2_18.
Saiyed N. and M.V.V. Kantipudi , (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, *International Journal of Computing and Digital Systems*, vol. 17, no. 1, pp. 1–13.
Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 1–10.
Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (February 27, 2025). Precision Biochar Yield Forecasting Employing Random Forest and XGBoost with Taylor Diagram Visualization. *Scientific Reports* 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.
Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (May 31, 2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. *Journal Européen Des Systèmes Automatisés* 58, no. 5: 983–90. https://doi.org/10.18280/jesa.580512.

BrailleMail: Voice-Controlled Email Assistant

Abraham, N.G. , George, J. , Chandy, J. , Mathew, A. and Nair, A. (2024). EchoLink: A voice-based email assistance for blind. Proceedings of SPICES 2024. *IEEE*. https://doi.org/10.1109/spices62143.2024.10779857

Agnihotri, R. and Kaur, J. (2023). Enhancing email accessibility for visually impaired individuals. *Journal of Cognitive Multimedia Management* 2(4). https://doi.org/10.57159/gadl.jcmm.2.4.23069

Belekar, A. , Sunka, S. , Bhawar, N. and Bhore, S. (2023). Voice-based e-mail for the visually impaired. *International Journal of Computer Applications*. https://doi.org/10.5120/ijca2020920657

Bindu, B.H. , Krishna, K.S. , Sai, G.P. , Pranavi, T. and Devi, A. (2022). Voice-based email system for blind. *International Journal of Advanced Research in Science, Communication and Technology* 2(11). https://doi.org/10.48175/ijarsct-7602

Dash, P.K. , Rajkumar, E. and Anupriya, K. (2023). Voice-based e-mail system for visually impaired people using AI techniques. In: *Advances in Computational Intelligence and Robotics*. Hershey, PA: IGI Global. https://doi.org/10.4018/978-1-6684-7679-6.ch011

Gulhane, M. , Patil, S. , Deshmukh, A. and Kale, A. (2019). Intelligent e-mail system for blind people using Braille language. *Journal Article*, 15 December 2019.

Gowroju, S. , Mounika, G. , Bhavana, D. , Latheef, S.A. and Abhilash, A. , (2023). Artificial intelligence–based active virtual voice assistant. *Explainable Machine Learning Models and Architectures*, pp.81-103.

Kotresh, H.M. and Geetha, G. (2024). Voice-based email system for blind using ML. *Indian Scientific Journal of Research in Engineering and Management*. https://doi.org/10.55041/ijsrem36636

Kumar, D. , Muktawat, H.S. and Islam, S. (2012). E-mail client having articulation and Braille transcription of e-mails for the blinds. *International Journal of Computer and Communication Technology* 3(2): 123–129. https://doi.org/10.47893/IJCCT.2012.1121

Malathi, D. , Gopika, S. , Awasthi, D. and Ramesh, P. (2023). Voice automation mail system for visually impaired. Proceedings of ICNWC 2023. *IEEE*. https://doi.org/10.1109/ICNWC57852.2023.10127558

Mishra, A. and Jha, P. (2024). Voice-based email system for visually impaired. *International Journal of Research Publication and Reviews* 5(4): 14–18. https://doi.org/10.55248/gengpi.5.0424.0954

Prakash, N. , Monlam, T. , Singh, R. , John, P. , Kumar, A. and Das, D. (2022). Voice-based e-mail with attachment for blind. Proceedings of ICOEI 2022. *IEEE.* https://doi.org/10.1109/ICOEI53556.2022.9776840

Roshini, R. , Bhat, R. , Ramya, R. , Prakash, K. and Vinay, S. (2024). Voice-based e-mail for visually impaired. *Nucleation and Atmospheric Aerosols*. https://doi.org/10.1063/5.0184082

Sasikala, C. , Rupalakshmi, M. , Ahammad, S.S. , Janakiraman, K. and Thomas, B. (2024). Enhancing blind communication with voice-assisted email. *Proceedings of ICOECA 2024. IEEE*. https://doi.org/10.1109/icoeca62351.2024.00062

Sharma, A. , Ahmed, V. , Sharma, S. , Jana, B. and Rani, K. (2023). Voice-based email system for blind people. *Journal of Electronics and Informatics* 2(9): 33–39. https://doi.org/10.36548/jei.2023.2.009

Shinde, D. (2023). Voice-based e-mail for the visually impaired. *International Journal for Science, Technology and Engineering*. https://doi.org/10.22214/ijraset.2023.51154

Sunanda, B.E. , Asritha, M.S. , Aruna, M. , Kavya, V. , Krishna, B.R. and Nikhil, M. (2024). Voice-based email assistant for visually impaired. *Social Science Research Network*. https://doi.org/10.2139/ssrn.4850424

Suresh, A. , Paulose, B. , Jagan, R. and Raj, R. (2016). Voice-based email for blind. *International Journal of Scientific Research in Science, Engineering and Technology* 2(2): 123–126. https://doi.org/10.32628/IJSRSET1622388

Thanuja, K.A. , Abinaya, R. and Vinothini, R. (2023). Voice-based email system for visually impaired interactive voice response. *International Journal for Science, Technology and Engineering*. https://doi.org/10.22214/ijraset.2023.52897

Thind, R. , Divya, K.A. , Verma, S. , Jangra, N. and Mehta, S. (2023). Voice email for the visually disabled. In: *Advances in Smart Systems and Computing, Singapore*: Springer. https://doi.org/10.1007/978-981-99-3010-4_60

Privacy-preserving protocols and mechanisms for decentralized environments: A comprehensive review

(PDF) Secure Multi-Party Computation (no date). Available at: https://www.researchgate.net/publication/2934115_Secure_Multi-Party_Computation (Accessed: 15 May 2024).

Abou-Nassar, E.M. , Iliyasu, A.M. , El-Kafrawy, P.M. , Song, O.Y. , Bashir, A.K. & Abd El-Latif, A.A. (2020). DITrust chain: towards blockchain-based trust models for sustainable healthcare IoT systems. *IEEE access*, 8, pp.111223-111238.

Acar, A , Aksu, H , Uluagac, A.S. & Conti, M. (2018). A survey on homomorphic encryption schemes: Theory and implementation. *ACM Computing Surveys (Csur)*, 51(4), pp.1-35.

Aitsam, M. (2022). Differential Privacy Made Easy, *2022 International Conference on Emerging Trends in Electrical, Control, and Telecommunication Engineering, ETECTE 2022 - Proceedings* [Preprint]. Available at: https://doi.org/10.1109/ETECTE55893.2022.10007322.

Arul, R , Alroobaea, R , Tariq, U , Almulihi, A.H. , Alharithi, F.S. & Shoaib, U. (2024). IoT-enabled healthcare systems using block chain-dependent adaptable services. *Personal and Ubiquitous Computing*, 28(1), pp.43–57.

Bano, S , Sonnino, A , Al-Bassam, M , Azouvi, S , McCorry, P , Meiklejohn, S & Danezis, G. (2019). SoK: Consensus in the age of blockchains. In *Proceedings of the 1st ACM Conference on Advances in Financial Technologies*, pp. 183–198.

Bonneau, J , Miller, A , Clark, J , Narayanan, A , Kroll, J.A. & Felten, E.W. (2015). Sok: Research perspectives and challenges for bitcoin and cryptocurrencies. In 2015 *IEEE symposium on security and privacy*, pp. 104–121.

Brown, R.G. , Carlyle, J , Grigg, I & Hearn, M. , (2016). Corda: an introduction. R3 CEV, August, 1(15), p.14.

Centobelli, P , Cerchione, R , Del Vecchio, P , Oropallo, E & Secundo, G. (2022). Blockchain technology for bridging trust, traceability and transparency in circular supply chain. *Information & Management*, 59(7), p.103508.

CHAINALYSIS TEAM . (2023). *The Importance of Blockchain Security - Chainalysis*, *Website*. Available at: https://www.chainalysis.com/blog/blockchain-security/ (Accessed: 11 January 2024).

Cheon, J.H. , Hhan, M , Kim, J & Lee, C. (2018). Cryptanalyses of branching program obfuscations over GGH13 multilinear map from the NTRU problem. In *Advances in Cryptology–CRYPTO 2018: 38th Annual International Cryptology Conference*, Santa Barbara, CA, USA, August 19–23, 2018, Proceedings, Part III 38 , pp. 184–210.

Dündar, F.S. & Arik, M. (2018). On the Non-Existence of Unbounded Discrete Space-Time. Available at: https://arxiv.org/abs/1808.08841v1, Accessed: 15 May 2024.

Fung, B.C. , Wang, K , Chen, R & Yu, P.S. (2010). Privacy-preserving data publishing: A survey of recent developments. *ACM Computing Surveys (Csur)*, 42(4), pp.1–53.

Garay, J , Kiayias, A & Leonardos, N. (2015) 'The Bitcoin Backbone Protocol: Analysis and Applications', *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 9057, pp. 281–310. Available at: https://doi.org/10.1007/978-3-662-46803-6_10.

Jabbar, S , Lloyd, H , Hammoudeh, M , Adebisi, B & Raza, U. (2021). Blockchain-enabled supply chain: analysis, challenges, and future directions. *Multimedia systems*, 27, pp.787–806.

Kadadha, M , Otrok, H , Mizouni, R , Singh, S & Ouali, A. (2022). On-chain behavior prediction machine learning model for blockchain-based crowdsourcing. *Future Generation Computer Systems*, 136, pp.170–181.

Kogias, E.K. , Jovanovic, P , Gailly, N , Khoffi, I , Gasser, L & Ford, B. (2016). Enhancing bitcoin security and performance with strong consistency via collective signing. In 25th usenix security symposium (usenix security 16), pp. 279–296.

Kosba, A , Miller, A , Shi, E , Wen, Z & Papamanthou, C. (2016). Hawk: The blockchain model of cryptography and privacy-preserving smart contracts. In 2016 *IEEE symposium on security and privacy (SP)* , pp. 839–858.

Malik, S , Dedeoglu, V , Kanhere, S.S. & Jurdak, R. (2022). PrivChain: Provenance and privacy preservation in blockchain enabled supply chains. In 2022 *IEEE International Conference on Blockchain (Blockchain)*, pp. 157–166.

McMahan, B , Moore, E , Ramage, D , Hampson, S & y Arcas, B.A. (2017). Communication-efficient learning of deep networks from decentralized data. In *Artificial intelligence and statistics*, pp. 1273–1282.

Miers, I , Garman, C , Green, M & Rubin, A.D. (2013). Zerocoin: Anonymous distributed e-cash from bitcoin. In 2013 IEEE symposium on security and privacy, pp. 397–411.

Nakamoto's Blockchain Proposal (Nakamoto, 2008) | Download Scientific Diagram (no date). Available at: https://www.researchgate.net/figure/Nakamotos-Blockchain-Proposal-Nakamoto-2008_fig2_325464908, Accessed: 15 May 2024.

Narayanan, A , Bonneau, J , Felten, E , Miller, A & Goldfeder, S. (2016). Bitcoin and cryptocurrency technologies: a comprehensive introduction. Princeton University Press.
Schoenmakers, B. (2011). Zero-Knowledge, *Encyclopedia of Cryptography and Security*, pp. 1401–1403. Available at: https://doi.org/10.1007/978-1-4419-5906-5_16.
Vol. 2024 No. 1 | IACR Transactions on Symmetric Cryptology (no date). Available at: https://tosc.iacr.org/index.php/ToSC/issue/view/354 (Accessed: 15 May 2024).
Wang, W , Hoang, D.T. , Hu, P , Xiong, Z , Niyato, D , Wang, P , Wen, Y & Kim, D.I. (2019). A survey on consensus mechanisms and mining strategy management in blockchain networks. *IEEE Access*, 7, pp.22328–22370.
Xu, P , Lee, J , Barth, J.R. & Richey, R.G. (2021). Blockchain as supply chain technology: considering transparency and security. *International Journal of Physical Distribution & Logistics Management*, 51(3), pp.305–324.
Zhao, Y , Zhao, J , Jiang, L , Tan, R , Niyato, D , Li, Z , Lyu, L & Liu, Y. (2020). Privacy-preserving blockchain-based federated learning for IoT devices. *IEEE Internet of Things Journal*, 8(3), pp.1817–1829.
Zheng, Z , Xie, S , Dai, H , Chen, X & Wang, H. (2017). An overview of blockchain technology: Architecture, consensus, and future trends. In 2017 *IEEE international congress on big data (BigData congress)*, pp. 557–564.
Zhuang, C , Dai, Q & Zhang, Y. (2022) 'BCPPT: A blockchain-based privacy-preserving and traceability identity management scheme for intellectual property', *Peer-to-Peer Networking and Applications*, 15(1), pp. 724–738. Available at: https://doi.org/10.1007/S12083-021-01277-1/METRICS.
Zyskind, G , Nathan, O & Pentland, A.S. (2015). Decentralizing privacy: Using blockchain to protect personal data, *Proceedings - 2015 IEEE Security and Privacy Workshops, SPW 2015*, pp. 180–184. Available at: https://doi.org/10.1109/SPW.2015.27.

Detection of android and windows malware using machine learning

Babaagba, K.O. , and S.O. Adesanya . (2019). A Study on the Effect of Feature Selection on Malware Analysis using Machine Learning. Proceedings of the 8th International Conference on Educational and Information Technology (ICEIT 2019), Association for Computing Machinery, New York, NY, USA, pp. 51–55.
Borah, P. , *et al.* (2020). Malware dataset generation and evaluation. IEEE 4th Conference on Information & Communication Technology (CICT), pp. 1–6.
Chakraborty, S. (2023). Android Malware Detection, [Dataset]. Kaggle. https://doi.org/10.34740/KAGGLE/DSV/4987461
Dhalaria, M. , and E. Gandotra . (2022). Detecting Android Malicious Applications using Dynamic Malware Analysis and Machine Learning. Proceedings of the Fourteenth International Conference on Contemporary Computing (IC3-2022), Association for Computing Machinery, New York, NY, USA, pp. 362–366.
Garg, U. , N. Sharma , M. Kumar , and A. Singh . (2023). Identification and Detection of Behavior Based Malware using Machine Learning. *International Conference on Artificial Intelligence and Smart Communication (AISC)*, Greater Noida, India, pp. 915–918.
Gill, K.S. , V. Anand , R. Gupta , and P.A. Hsiung . (2023). Detection of Malware Using Machine Learning techniques on Random Forest, Decision Tree, KNeighbour, AdaBoost, SGD, ExtraTrees and GaussianNB Classifier. *4th IEEE Global Conference for Advancement in Technology (GCAT)*, Bangalore, India, pp. 1–7.
Hossain, M. , S. Rafi , and S. Hossain . (2020). An Optimized Decision Tree based Android Malware Detection Approach using Machine Learning. *Proceedings of the 7th International Conference on Networking, Systems and Security (NSysS '20)*, Association for Computing Machinery, New York, NY, USA, pp. 115–125.
Irfan, A.N. , A. Ariffin , M.N. Mahrin , and S. Anuar . (2020). A Malware Detection Framework Based on Forensic and Unsupervised Machine Learning Methodologies. *Proceedings of the 9th International Conference on Software and Computer Applications (ICSCA '20)*, Association for Computing Machinery, New York, NY, USA, pp. 194–200.
Judy, S. , and R. Khilar . (2023). Detection and Classification of Malware for Cyber Security using Machine Learning Algorithms. *Eighth International Conference on Science Technology Engineering and Mathematics (ICONSTEM)*, Chennai, India, pp. 1–6. https://doi.org/10.1109/ICONSTEM56934.2023.10142575.
Kumar, A. , K. Abhishek , S.K. Shandilya , and M.R. Ghalib . (2020). Malware Analysis Through Random Forest Approach. Journal of Web Engineering 19(5–6): 795–818.
Mijoya, I.B. , S. Khurana , and N. Gupta . (2022). Malware detection in Android devices Using Machine Learning. *International Conference on Computing, Communication, and Intelligent Systems (ICCCIS)*, Greater Noida, India, pp. 307–312.

Pachhala, N. , S. Jothilakshmi , and B.P. Battula . (2021). A comprehensive survey on identification of malware types and malware classification using machine learning techniques. *2nd International Conference on Smart Electronics and Communication (ICOSEC)*, Trichy, India, pp. 1207–1214.
Roseline, S.A. , S. Geetha , S. Kadry , and Y. Nam . (2020). Intelligent Vision-Based Malware Detection and Classification Using Deep Random Forest Paradigm. IEEE Access 8: 206303–206324.
Salah, A.T. , M.A. Hassan , M.I. Abbas , Y.H. Sayed , Z.M. Elsahaer , and G.A. Khoriba . (2022). Android Static Malware Detection using Tree-based Machine Learning Approaches . *2nd International Mobile, Intelligent, and Ubiquitous Computing Conference (MIUCC)*, Cairo, Egypt, pp. 3–10. https://doi.org/10.1109/MIUCC55081.2022.9781765.
Tirandasu, R.K. , and Y. Prasanth . (2023). A review on malicious software detection using machine learning algorithms. *Second International Conference on Electronics and Sustainable Communication Systems (ICESC)*, Coimbatore, India, pp. 1945–1948.
Yuan, W. , Y. Jiang , H. Li , and M. Cai . (2021). A Lightweight On-Device Detection Method for Android Malware. IEEE Transactions on Systems, Man, and Cybernetics: Systems 51(9): 5600–5611. https://doi.org/10.1109/TSMC.2019.2958382.
Zhang, X. , A. Mathur , L. Zhao , S. Rahmat , Q. Niyaz , A. Javaid , and X. Yang . (2022). An Early Detection of Android Malware Using System Calls based Machine Learning Model. *Proceedings of the 17th International Conference on Availability, Reliability and Security (ARES '22),* Association for Computing Machinery, New York, NY, USA, Article 92, pp. 1–9.
https://statista.com/statistics/873097/malware-attacks-per-year-worldwide/
https://archive.ics.uci.edu/ml/datasets/Detect+Malacious+Executable (AntiVirus)
https://figshare.com/articles/dataset/Windows_Malware_Detection_Dataset/21608262
Jabbar M.A. , Kantipudi M.P. , Madureira A.M. , Reaz M.B.I. , and Peng S.-L. (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.
Buchade A.C. and Kantipudi M.P. (2024). Recent Trends on Brain Tumor Detection Using Hybrid Deep Learning Methods, Revue d'Intelligence Artificielle, vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.
Saini V. , Jain A. , Anurag , and Kantipudi M.V.V.P. (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in *Proc. 15th Int. Conf. Soft Comput. Pattern Recognit. (SoCPaR 2023)*, A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer. doi: 10.1007/978-3-031-81086-2_18.
Kantipudi M.P. , Kumar S. , and Jha A.K. (2021). Scene text recognition based on bidirectional LSTM and deep neural network, Computational Intelligence and Neuroscience, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.
Agrawal V. , Kantipudi M.P. , and Jagtap J. , (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, Scientific Reports, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.
Saiyed N. and Kantipudi M.V.V. (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, *International Journal of Computing and Digital Systems,* vol. 17, no. 1, pp. 1–13.
Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi . (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 1–10.
Jain, Ayushi , Vaibhav Saini , Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework. In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120 *et al.* 133. Cham: Springer Nature Switzerland.
Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI, EAI Endorsed Transactions on Pervasive Health and Technology, vol. 10, doi: 10.4108/eetpht.10.5544.
xxx.
Aluvalu R. , Asha V. , Anandhi R.J. , Prasad Kantipudi M.V.V. , Bali J. , and Bhanja M. (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, International Journal of Computing and Digital Systems, vol. 16, no. 1, pp. 189–204.
Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building Enhanced Neural Network Models to Predict Energy Storage Density of Composite Materials for Low-Temperature Thermochemical Energy Storage. Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy, 1–37. https://doi.org/10.1115/1.4069225.
Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). Virtual Prédiction of Residual Stresses in Laser Welding Process Using Machine Learning Technique an Industry 4.0 Approach. Journal Européen Des Systèmes Automatisés 58, no. 5:

983–990. https://doi.org/10.18280/jesa.580512.
Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (2025). Precision Biochar Yield Forecasting Employing Random Forest and XGBoost with Taylor Diagram Visualization. Scientific Reports 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.

AI and blockchain integrated smart cybersecurity for proactive threat defense

Agrawal V. , M.P. Kantipudi , and J. Jagtap , (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, *Scientific Reports*, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.
Ahmed, M. , Mahmood, A.N. & Hu, J. , (2016). A survey of network anomaly detection techniques. *Journal of Network and Computer Applications*, 60, pp.19–31.
Akkepalli, S. & Sagar, K. (2024). A survey of novel framework of anomaly-based intrusion detection systems in computer networks using ensemble feature integration with deep learning techniques. In: *Proceedings of the 16th International Conference on Machine Learning and Computing (ICMLC '24)*, New York, NY, USA, pp. 200–205. Association for Computing Machinery (ACM). https://doi.org/10.1145/3651671.3651673
Anand, Nemalikanti, Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (July 23). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. *Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy*, 2025, 1–37. https://doi.org/10.1115/1.4069225.
Astarkie, M.G. , Gangone, S. , Bala, B. , Bharat Kumar, G.J. & Nagesh, Y. (2023b). A novel approach for high authentication in digital watermarking technique. In: Kumar, A., Ghinea, G., Merugu, S. & Hashimoto, T. (eds) *Proceedings of the International Conference on Cognitive and Intelligent Computing. Cognitive Science and Technology*. Singapore: Springer. https://doi.org/10.1007/978-981-19-2358-6_23
Casino, F. , Dasaklis, T.K. & Patsakis, C. , (2019). A systematic literature review of blockchain-based applications: Current status, classification and open issues. *Telematics and Informatics*, 36, pp.55–81.
Conti, M. , Dehghantanha, A. , Franke, K. & Watson, S. , (2018). Internet of Things security and forensics: Challenges and opportunities. *Future Generation Computer Systems*, 78, pp.544–546.
Dorri, A. , Kanhere, S.S. , Jurdak, R. & Gauravaram, P. , (2017). Blockchain for IoT security and privacy: The case study of a smart home. In *2017 IEEE International Conference on Pervasive Computing and Communications Workshops (PerCom Workshops)*. IEEE, pp.618–623.
Eswanadhula, R.K. , Reddy, S. & Reddy, M. (2023). A multi-stage cloud security for cloud data using amalgamate data security. In: *Proceedings of the 2023 International Conference on Automation and Networking (ICONAT)*, pp. 1–5. IEEE. https://doi.org/10.1109/ICONAT57137.2023.10080583
Gangone, S. , Bala, B. & Kumar, G.J.B. 2023. Mining health dataset for risk identification. In: Kumar, A., Senatore, S. & Gunjan, V.K. (eds) ICDSMLA (2021). *Lecture Notes in Electrical Engineering*, vol. 947. Singapore: Springer. https://doi.org/10.1007/978-981-19-5936-3_59
IBM Security , (2023). *AI and Blockchain: The Future of Cybersecurity*. Available at: https://www.ibm.com.
Jain, Ayushi , Vaibhav Saini , Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing Autonomous Vehicle Intelligence with Cutting-Edge Spatial Crowdsourcing Framework. In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120–133. Cham: Springer Nature Switzerland.
Kshetri, N. , (2017). Can blockchain strengthen the internet of things? IT Professional, 19(4), pp.68–72.
Nagaraj, P. , Prasad, T. , Nagesh, O. & Kallepalli, K. (2024). Hybrid method for discovering DDOS attack. In:Singapore: Springer. https://doi.org/10.1007/978-981-97-4727-6_14
Nakamoto, S. , (2008). Bitcoin: A Peer-to-Peer Electronic Cash System. Available at: https://bitcoin.org/bitcoin.pdf.
Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (Mar. 2024). Enhancing Health Product Traceability on the Blockchain: A Novel Approach for Supply Chain Management inspection to AI, *EAI Endorsed Transactions on Pervasive Health and Technology*, vol. 10, doi: 10.4108/eetpht.10.5544.
Sayeed, S. , Marco-Gisbert, H. & Salah, K. , (2019). Assessing blockchain's suitability for trustworthy IoT-based personal health data exchange: A short review. *IEEE Internet of Things Journal*, 6(5), pp.8230–8240.
Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , (2024). A machine learning-based optimization algorithm for wearable wireless sensor networks, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 1–10.
Tan, R. , Cardenas, A.A. & Hou, J.C. , (2017). A brief study of cybersecurity in smart grid: Attacks and defenses. In *2017 IEEE Conference on Communications and Network Security (CNS)*. IEEE, pp.493–498.

Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (February 27, 2025). Precision biochar yield forecasting employing random forest and xgboost with taylor diagram visualization. *Scientific Reports* 15, no. 1 https://doi.org/10.1038/s41598-025-91450-w.

Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (May 31, 2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. *Journal Européen Des Systèmes Automatisés* 58, no. 5 983–90. https://doi.org/10.18280/jesa.580512.

Zolanvari, M. , Teixeira, M.A. , Gupta, L. , Khan, K.A. & Jain, R. , (2019). Machine learning-based network vulnerability analysis of industrial Internet of Things. *IEEE Internet of Things Journal*, 6(4), pp.6822–6834.

Privacy preserving distributed point function keyword search for secure shared cloud storage

Agrawal V. , M.P. Kantipudi , and J. Jagtap , (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, *Scientific Reports*, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.

Agrawal, S. and Boneh, D. , (2009). Homomorphic message authentication considering network-coded environments.

Allam, B. , Nabi, S.A. , Manda, S. and Shareef, S.K. (2023). A provable semiology seeking scheme over encoding data in public cloud. *AIP Conference Proceedings*, 2492(1), 030074. https://doi.org/10.1063/5.0113207

Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. *Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy*, July 23, 2025, 1–37. https://doi.org/10.1115/1.4069225.

Bharat Kumar, G.J. (2018b). Internet of Things (IoT) and cloud computing in hybrid organisations using monitoring systems. In: *Proceedings of the 3rd International Conference on Contemporary Computing and Informatics (IC3I)*, Gurgaon, India, pp. 348–351. IEEE. https://doi.org/10.1109/IC3I44769.2018.9007302

Bost, R. , (2016). Σοφος: Design of forward-secure searchable encryption methods.

Boyle, E. , Gilboa, N. and Ishai, Y. , (2016). Enhancements & variants of function secret sharing schemes.

Buchade A.C. and Kantipudi M.P. (2024). Recent Trends on Brain Tumor Detection Using Hybrid Deep Learning Methods, *Revue d'Intelligence Artificielle*, vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.

Chamani, J.G. , Papadopoulos, D. , Papamanthou, C. and Jalili, R. , (2018). Constructing SSE among forward & backward privacy features.

Choi, S.G. , Dachman-Soled, D. , Gordon, S.D. , Liu, L. and Yerukhimovich, A. , (2021). Efficient homomorphic encrypted search using compressed oblivious encoding.

Chor, B. , Kushilevitz, E. , Goldreich, O. and Sudan, M. , (1998). Basic frameworks considering private retrieval of information.

Dauterman, E. , Feng, E. , Luo, E. , Popa, R.A. and Stoica, I. , (2020). DORY: Trust-distributed system considering encrypted keyword queries.

de Castro, L. and Polychroniadou, A. , (2022). Maliciously secure verifiable FSS among lightweight design.

Dong, C. , Chen, L. and Wen, Z. , (2013). Optimizing private set intersection considering big data environments.

EnderCheng , (2023). GitHub project considering encrypted keyword search techniques.

Gilboa, N. and Ishai, Y. , (2014). Applications & design of distributed point function constructions.

Goldreich, O. , Goldwasser, S. and Micali, S. , (1986). Approaches towards building pseudorandom functions securely.

Gui, Z. , Paterson, K.G. and Patranabis, S. , (2023). A critical reevaluation of symmetric searchable encryption methods.

Jabbar M.A. , M.P. Kantipudi , A.M. Madureira , M.B.I. Reaz , and S.-L. Peng , (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.

Kantipudi M.P. , S. Kumar , and A.K. Jha , Scene text recognition based on bidirectional LSTM and deep neural network, *Computational Intelligence and Neuroscience*, vol. 2021, pp. 1–11, Jan. 2021, doi: 10.1155/2021/2676780.

Katz, J. and Lindell, A.Y. , (2008). Aggregate MACs considering secure message authentication.

Kumar, R. , Rajagopalan, S. and Sahai, A. , (1999). Blacklist-robust coding schemes without computational hardness assumptions.

Manikonda et al. (2023) proposed a dynamic scheduling method tailored for stochastic edge-cloud computing environments to optimize resource allocation.
Medishetti, S.K. , et al. (2024). HGCSO: Energy efficient multi-objective task scheduling in cloud-fog environment. In: Castillo, O., Sudhakar Babu, T. and Aluvalu, R. (eds) Pervasive Knowledge and Collective Intelligence on Web and Social Media. PerSOM 2023. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, vol. 517. Cham: Springer. https://doi.org/10.1007/978-3-031-66044-3_2
Miao, Y. , Deng, R.H. , Liu, X. , Choo, K.R. , Wu, H. and Li, H. , (2021). Encrypted cloud keyword search via multi-authority attribute-based access.
Miao, Y. , Zheng, W. , Jia, X. , Liu, X. , Choo, K.R. and Deng, R. , (2023). Machine learning techniques considering ranked keyword queries on encrypted cloud datasets.
Oya, S. and Kerschbaum, F. , (2021). Security limitations of hiding only access patterns in encrypted search.
Papadopoulos, D. and Wang, Y. , (2021). Secure search supporting multiple users among resistance towards collusion.
Saiyed N. and Kantipudi M.V.V. (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, *International Journal of Computing and Digital Systems*, vol. 17, no. 1, pp. 1–13, 2024.
Sembeta, C. , Embabo, A. , Gangone, S. and Bharat Kumar, G.J. (2024). Aspect based sentiment analysis for hotel services in Afaan Oromo text using deep learning. In: Kumar, A. and Mozar, S. (eds) Proceedings of the 6th International Conference on Communications and Cyber Physical Engineering (ICCCE 2024). Lecture Notes in Electrical Engineering, vol. 1096. Singapore: Springer. https://doi.org/10.1007/978-981-99-7137-4_66
Shang, Z. , Oya, S. , Peter, A. and Kerschbaum, F. , (2021). Encrypted search among obfuscation of access & query patterns.
Shen, X. et al. , (2021). Architectures considering managing data privacy & policies in next-gen wireless networks.
Stefanov, E. et al. , (2018). Path ORAM: A straightforward protocol considering oblivious access towards RAM.
Sudhakar Yadav N. , U. Maheswari V., R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. (2024). Prasad Kantipudi, A machine learning-based optimization algorithm for wearable wireless sensor networks, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 1–10.
Sun, S.-F. et al. , (2022). Practical deployment of multi-client searchable encryption without interaction.
Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (2025). Precision biochar yield forecasting employing random forest and XGBoost with taylor diagram visualization. *Scientific Reports* 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.
Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. *Journal Européen Des Systèmes Automatisés* 58, no. 5: 983–90. https://doi.org/10.18280/jesa.580512.
Wang, X. , Ma, J. , Liu, X. , Miao, Y. , Liu, Y. and Deng, R.H. , (2023). Secure & private spatial keyword search using DSSE.
Yuan, X. , Cui, H. and Wang, C. , (2017). Sharing encrypted mobile images securely over cloud platforms.

AI-based morphed voice detection system for detecting fake voices

Brümmer, N. and Villalba, J. (2019). Detecting synthetic speech using X-vectors. Proc. Interspeech: 2317–2321.
Choudhary, S. , Gowroju, S. , Srilakshmi, R. , Kumar, B.B. , Ghai, D. and Rakesh, N. , (2024, May). Fake News Detection: A Comprehensive Methodology Utilizing Topic Modeling and Machine Learning. In *2024 International Conference on Communication, Computer Sciences and Engineering (IC3SE)* (pp. 472-477). IEEE.
Chaitanya, M.K. and Sharma, L.D. , (2024). Pre-trained Bi-LSTM model for automated classification of ventricular arrhythmias using 1-D and 2-D ECG. *Bulletin of Electrical Engineering and Informatics*, 13(4), pp.2485-2495.
Evans, N. , Wang, X. and Todisco, M. (2019). ASVspoof 2019: Automatic speaker verification spoofing and countermeasures challenge. *Proc. Interspeech*: 1000–1004.
Evans, N. , Nautsch, A. , Yamagishi, J. and Kinnunen, T. (2022). Speech spoofing and deepfake detection: A survey. IEEE *Journal of Selected Topics in Signal Processing* 16(6): 1194–1215.

Garcia, D. and Mendez, A. (2023). Grad-CAM analysis for explainable deepfake voice detection. *Pattern Recognition Letters* 170: 40–48.
Han, H. and Lee, K. (2021). A CNN–LSTM hybrid network for voice deepfake detection. *Proc. IEEE International Conference on Machine Learning Applications (ICMLA)*: 552–557.
Huang, L. , Zhao, X. and Wang, J. (2024). Multi-scale feature extraction for synthetic voice detection. *Applied Acoustics* 215: 109–128.
Kim, H. , Park, J. and Lee, Y. (2023). Self-supervised representations for robust speech anti-spoofing. *IEEE/ACM Transactions on Audio, Speech, and Language Processing* 31: 240–253.
Kozlov, A. , Lavrentyeva, S. and Makarov, E. (2019). STC anti-spoofing system for the ASVspoof 2019 challenge. *Proc. Interspeech*: 1033–1037.
Li, W. and Chen, J. (2022). Attention-based deep learning for synthetic speech detection. *Neural Computing and Applications* 34(21): 18931–18945.
Patil, S. , Agarwal, P. and Kaur, R. (2021). Deep spectrogram features for voice spoofing detection. *Proc. IEEE ICASSP*: 6359–6363.
Sharma, P. and Gupta, R. (2024). Ensemble learning approaches for AI-morphed voice detection. *Journal of Information Security Research* 12(3): 45–57.
Singh, R. and Srivastava, A. (2020). Spectrogram analysis for morphed voice detection. *IEEE Access* 8: 156450–156460.
Wu, Z. , Yamagishi, J. and King, S. (2015). Detecting artificially generated speech using pitch pattern analysis. Proc. IEEE ICASSP: 4840–4844.
Zhang, Y. , Wu, H. and Li, T. (2022). Data augmentation strategies for spoofed speech detection. *Computer Speech & Language* 72: 101–118.

Anti-spoofing attendance system using blockchain and AI face recognition

Antil, Aashania and Dhiman, Chhavi (2024). MF2ShrT: multimodal feature fusion using shared layered transformer for face anti-spoofing. *ACM Transactions on Multimedia Computing, Communications and Applications* 20(6): 1–21.
Bhattacharya, P. , Tanwar, S. , Bodkhe, U. , Kumar, A. and Kumar, N. , (2022). EVBlocks: A blockchain-based secure energy trading scheme for electric vehicles underlying 5G-V2X ecosystems. *Wireless Personal Communications*, 127(3), pp.1943–1983.
El Haddouti, Samia , Khaldoune, Mohammed , Ayache, Meryeme and El Kettani, Mohamed DafirEch-Cherif (2024). Smart contracts auditing and multi-classification using machine learning algorithms: an efficient vulnerability detection in ethereum blockchain. *Computing* 106(9): 2971–3003.
Gao, Zheng and Patras, Ioannis (2024). Self-supervised facial representation learning with facial region awareness. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition* pp. 2081–2092.
Ge, Xinxu , Liu, Xin , Yu, Zitong , Shi, Jingang , Qi, Chun , Li, Jie and Kälviäinen, Heikki (2024). Difffas: face anti-spoofing via generative diffusion models. *European Conference on Computer Vision* pp. 144–161.
Guirguis, Michel and Papasavvas, Michael (2024). Ethereum smart contracts programming and financial modeling using Solidity. Available at SSRN 4726143.
Huber, Marco , Luu, Anh Thi , Terhörst, Philipp and Damer, Naser (2024). Efficient explainable face verification based on similarity score argument backpropagation. *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision* pp. 4736–4745.
Iqbal, Mubashar , Mont, Henry Marie and Matulevičius, Raimundas (2024). STAMP: Blockchain and DAO-based student attendance management *platform. 2024 7th International Balkan Conference on Communications and Networking (BalkanCom)* pp. 26–30.
Karanwal, Shekhar (2024). Discriminative binary pattern descriptor for face recognition. Pattern Analysis and Applications 27(3): 78.
Karthika, S. , Padmavathi, G. , Bhuvaneshwari, R. and Samyuktha, G. (2024). Enhancing face spoofing detection via CNN model integration with normalized features. *International Conference on Electronic Governance with Emerging Technologies* pp. 51–67.
Kaur, Samandeep and Singh, Jaswinder (2024). Designing and deploying blockchain with Truffle and smart contracts. *International Conference on Network Security and Blockchain Technology* pp. 327–336.
Kiani, Rasoul and Sheng, Victor S. (2024). Ethereum smart contract vulnerability detection and machine learning-driven solutions: A systematic literature review. *Electronics* 13(12): 2295.
Kim, Heesang and Kim, Dohoon (2024). Optimal gas fee minimization in DeFi: enhancing efficiency and security on the Ethereum blockchain. *IEEE Access*.

Križaj, Janez , Plesh, Richard O. , Banavar, Mahesh , Schuckers, Stephanie and Štruc, Vitomir (2024). Deep face decoder: towards understanding the embedding space of convolutional networks through visual reconstruction of deep face templates. *Engineering Applications of Artificial Intelligence* 132: 107941.

Liu, Yang , He, Jinlong , Li, Xiangyang , Chen, Jingwen , Liu, Xinlei , Peng, Song , Cao, Haohao and Wang, Yaoqi (2024). An overview of blockchain smart contract execution mechanism. *Journal of Industrial Information Integration*: 100674.

Maariz, Akhmad , Wiputra, Muhammad Aqil and Armanto, Muhammad Randika Dafa (2024). Blockchain technology: revolutionizing data integrity and security in digital environments. *International Transactions on Education Technology (ITEE)* 2(2): 92–98.

Nawaz, Muhammad Ahmad , She, Kun , Rauf, Muhammad Arslan , Khan, Shumaila , Khan, Javed Ali , Aldakheel, Eman Abdullah and Khafaga, Doaa Sami (2024). Enhancing security and privacy in distributed face recognition systems through blockchain and GAN technologies. *Computers, Materials & Continua* 79(2): 2609–2623.

Papantoniou, Foivos Paraperas , Lattas, Alexandros , Moschoglou, Stylianos , Deng, Jiankang , Kainz, Bernhard and Zafeiriou, Stefanos (2024). Arc2face: A foundation model for id-consistent human faces. *European Conference on Computer Vision* pp. 241–261.

Shaheed, Kashif , Szczuko, Piotr , Kumar, Munish , Qureshi, Imran , Abbas, Qaisar and Ullah, Ihsan (2024). Deep learning techniques for biometric security: A systematic review of presentation attack detection systems. *Engineering Applications of Artificial Intelligence* 129: 107569.

Steck, Harald , Ekanadham, Chaitanya and Kallus, Nathan (2024). Is cosine-similarity of embeddings really about similarity? *Companion Proceedings of the ACM Web Conference* pp. 887–890.

Xu, Junfeng , Lin, Weiguo , Fan, Wenqing , Chen, Jia , Li, Keqiu , Liu, Xiulong , Xu, Guangquan , Yi, Shengwei and Gan, Jie (2024). A graph neural network model for live face anti-spoofing detection camera systems. *IEEE Internet of Things Journal*.

Realtime keylogger detection and alert

Choi, I.Y. , Choi, J.H. and Lee, W.Y. (2014). A design and implementation of a solution for real detection of information leakage by keylogging attack. *Journal of Korea Multimedia Society*, 17(10): 1203–1213.

Elelegwu, D. , Chen, L. , Ji, Y. and others . (2024). A novel approach to detecting and mitigating keyloggers. *Journal of Cybersecurity Studies*, 12(1): 45–60.

Garvey, J.F. , Himberger, K.D. , Jeffries, C.D. and others . (2004). *System and Method for Detecting Keyboard Logging.* US Patent Application, December 23.

Kamma, V. , Choudhary, S. , Kumar, S. , Gowroju, S. , Badhiye, S.S. and Prakash, K.B. , (2025, April). Smart Inquiry Management: Leveraging Machine Learning and NLP for Industry 5.0 Advancements. In *2025 4th OPJU International Technology Conference (OTCON) on Smart Computing for Innovation and Advancement in Industry* 5.0 (pp. 1–6). IEEE.

Levshun, D. and Levshun, D. (2023). Approach for keylogger detection based on artificial intelligence methods. *Informatizaciâisvâz'*, 14(3): 85–91. doi: 10.34219/2078-8320-2023-14-3-85-91.

Mubarak, M.F.B. , Ahmad, Z.B. and Rasidi, M.F.B.M. (2014). Method and system for detecting keylogger. *Proceedings of the International Conference on Sustainable Engineering and Blockchain (SEB-SDG)*. doi: 10.1109/SEB-SDG57117.2023.10124477.

Pawan, V. (2023). Beyond traditional keyloggers: Developing and detecting advanced keystroke monitoring systems. *Proceedings of the International Conference on Computer Science and IT Security Systems (CSITSS)*. doi: 10.1109/csitss60515.2023.10334216.

R.P.N. (2023). An analysis on keylogger attack and detection based on machine learning. *Proceedings of the International Conference on Electronics and Computing (ICECONF)*. doi: 10.1109/ICECONF57129.2023.10083937.

Saiganesan, N. , Dheenadhayalan, A. , Arulmani, M. and others . (2018). Anti-hacking mechanism for keylogger using blackbox detection. *International Journal of Engineering Research and Technology*, 7(7): 225–230.

Physics-informed neural networks for forward and inverse problem solving using DeepXDE

Agrawal V. , Kantipudi M.P. , and Jagtap J. (2025). Enhancing hand-drawn diagram recognition through the integration of machine learning and deep learning techniques, *Scientific Reports*, vol. 15, p. 17311. doi: 10.1038/s41598-025-01823-4.

Aluvalu R. , Asha V. , Anandhi R.J. , Prasad Kantipudi M.V.V. , Bali J. , and Bhanja M. (2024). Advanced heterogeneous ensemble voting mechanism with GRFOA based feature selection for emotion recognition from EEG signal analysis, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 189–204.

Anand, Nemalikanti , Sudhakar Uppalapati , Ankammarao Padamurthy , Panchagnula Kishore Kumar , G Naveen Kumar , and Harinadh Vemanaboina . (2025). Building enhanced neural network models to predict energy storage density of composite materials for low-temperature thermochemical energy storage. *Journal of Energy Resources Technology, Part A: Sustainable and Renewable Energy*, 1–37. https://doi.org/10.1115/1.4069225.

Balaji, C. (2021). *Essentials of Radiation Heat Transfer*. Springer.

Buchade A.C. and Kantipudi M.P. (2024). Recent trends on brain tumor detection using hybrid deep learning methods, *Revue d'Intelligence Artificielle*, vol. 38, no. 1, pp. 103–113, doi: 10.18280/ria.380111.

Choudhary S. , Kandikattu C.H. , Kumar S. , Kantipudi M.P. and Kumar M. (2024). Enhancing cybersecurity through combined convolutional neural network-gated recurrent unit approach for distributed denial of service attack detection, *2024 1st International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR)*, Muscat, Oman, pp. 1–6, doi: 10.1109/ICIESTR60916.2024.10798189.

Goodfellow, I. , Bengio, Y. , Courville, A. , and Bengio, Y. (2016). Deep learning (Vol. 1, No. 2). Cambridge: MIT press.

Jabbar M.A. , Kantipudi M.P. , Madureira A.M. , Reaz M.B.I. , and Peng S.-L. (2022). Machine learning methods for signal, image and speech processing. doi: 10.1201/9781003338789.

Jain, Ayushi , Vaibhav Saini , Ayush Dodia , and M.V.V. Prasad Kantipudi . (2023). Revolutionizing autonomous vehicle intelligence with cutting-edge spatial crowdsourcing framework. In *International Conference on Pervasive Knowledge and Collective Intelligence on Web and Social Media*, pp. 120–133. Cham: Springer Nature Switzerland.

Kantipudi M.P. , Kumar S. , and Jha A.K. (2021). Scene text recognition based on bidirectional LSTM and deep neural network, *Computational Intelligence and Neuroscience*, vol. 2021, pp. 1–11, doi: 10.1155/2021/2676780.

Lagaris, I.E. , Likas, A. , and Fotiadis, D.I. (1998). Artificial neural networks for solving ordinary and partial differential equations. *IEEE Transactions on Neural Networks*, 9(5), 987–1000.

Lu, L. , Meng, X. , Mao, Z. , and Karniadakis, G.E. (2021). DeepXDE: A deep learning library for solving differential equations. SIAM review, 63(1), 208–228.

Prashanth M.S. , U. Maheswari V., R. Aluvalu , and M.V.V.P. Kantipudi , (2024). Enhancing health product traceability on the blockchain: A novel approach for supply chain management inspection to AI, *EAI Endorsed Transactions on Pervasive Health and Technology*, vol. 10, doi: 10.4108/eetpht.10.5544.

Raissi, M. , Perdikaris, P. , and Karniadakis, G.E. (2019). Physics-informed neural networks: A deep learning framework for solving forward and inverse problems involving nonlinear partial differential equations. *Journal of Computational physics*, 378, 686–707.

Saini V. , Jain A. , Anurag , and Kantipudi M.V.V.P. (2025). An efficient approach for improving the performance of autonomous vehicle using advanced computer vision, in *Proc. 15th Int. Conf. Soft Comput. Pattern Recognit.* (SoCPaR 2023), A. Bajaj, A. Abraham, K. R. Madhavi, and O. Castillo, Eds., vol. 1247, Lecture Notes in Networks and Systems, Cham: Springer. doi: 10.1007/978-3-031-81086-2_18.

Saiyed N. and Kantipudi M.V.V. , (2024). Efficient aerial drone object detection and instance segmentation for plastic detection: A comprehensive comparative analysis and further investigations, *International Journal of Computing and Digital Systems*, vol. 17, no. 1, pp. 1–13.

Sudhakar Yadav N. , Maheswari V , R. Aluvalu , M. Sai Prashanth , V. Saini , and M.V.V. Prasad Kantipudi , A machine learning-based optimization algorithm for wearable wireless sensor networks, *International Journal of Computing and Digital Systems*, vol. 16, no. 1, pp. 1–10.

Uppalapati, Sudhakar , Prabhu Paramasivam , Naveen Kilari , Jasgurpreet Singh Chohan , Praveen Kumar Kanti , Harinadh Vemanaboina , Leliso Hobicho Dabelo , and Rupesh Gupta . (2025). Precision biochar yield forecasting employing random forest and XGBoost with taylor diagram visualization. *Scientific Reports* 15, no. 1. https://doi.org/10.1038/s41598-025-91450-w.

Vikram M , Sudhakar Uppalapati , Ashok Battula , Srinivasa Babu Kasturi , Harinadh Vemanaboina , and Satish Kumar . (2025). Virtual prédiction of residual stresses in laser welding process using machine learning technique an industry 4.0 approach. *Journal Européen Des Systèmes Automatisés* 58, no. 5: 983–90. https://doi.org/10.18280/jesa.580512.

Cross domain adaption for CNN's-learning in a new environment

Ganin, Y. and Lempitsky, V. (2015). Unsupervised domain adaptation by backpropagation. *Proceedings of the 32nd International Conference on Machine Learning (ICML)*, Lille, France, Jul 2015, pp. 1180–1189.

Gretton, A. , Borgwardt, K.M. , Rasch, M.J. , Schölkopf, B. and Smola, A. (2012). A kernel two-sample test. *Journal of Machine Learning Research* 13(25): 723–773.

Hoffman, J. , Tzeng, E. , Park, T. , Zhu, J.-Y. , Saenko, K. , Efros, A.A. and Darrell, T. (2018). CyCADA: Cycle-consistent adversarial domain adaptation. *Proceedings of the 35th International Conference on Machine Learning (ICML), Stockholm*, Sweden, Jul 2018, pp. 1989–1998.

Long, M. , Cao, Y. , Wang, J. and Jordan, M.I. (2015). Learning transferable features with deep adaptation networks. *Proceedings of the 32nd International Conference on Machine Learning (ICML)*, Lille, France, Jul 2015, pp. 97–105.

Peng, X. , Bai, Q. , Xia, X. , Huang, Z. , Saenko, K. and Wang, B. (2019). Moment matching for multi-source domain adaptation. *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, Seoul, Korea, Oct 2019, pp. 1406–1415.

Rani, S. , Ghai, D. and Kumar, S. , (2022). Object detection and recognition using contour based edge detection and fast R-CNN. *Multimedia Tools and Applications*, 81(29), pp.42183–42207.

Saito, K. , Ushiku, Y. and Harada, T. (2017). Asymmetric tri-training for unsupervised domain adaptation. *Proceedings of the 34th International Conference on Machine Learning (ICML)*, Sydney, Australia, Aug 2017, pp. 2988–2997.

Sun, B. and Saenko, K. (2016). *Deep CORAL: Correlation alignment for deep domain adaptation. European Conference on Computer Vision (ECCV)*, Amsterdam, Netherlands, Oct 2016, pp. 443–450.

Tzeng, E. , Hoffman, J. , Zhang, N. , Saenko, K. and Darrell, T. (2014). Deep domain confusion: Maximizing for domain invariance. *arXiv preprint arXiv*:1412.3474.

Wang, M. and Deng, W. (2018). Deep visual domain adaptation: A survey. *Neurocomputing* 312: 135–153.

Zhang, Y. , David, P. and Gong, B. (2017). Curriculum domain adaptation for semantic segmentation of urban scenes. *Proceedings of the 2017 IEEE International Conference on Computer Vision (ICCV)*, Venice, Italy, Oct 2017, pp. 2020–2030.

Evaluating story generation in small language models: Fine-Tuning and Metric Analysis

Askell, A. , Bai, Y. , Chen, A. et al. (2021). A general language assistant as a laboratory for alignment. *arXiv preprint arXiv*:2112.00861.

Banerjee, S. and Lavie, A. (2005). METEOR: An automatic metric for MT evaluation with improved correlation with human judgments. *Proceedings of WMT*.

Barandoni, S. , Trichopoulos, G. , Konstantakis, M. , Alexandridis, G. and Caridakis, G. (2024). Automating customer needs analysis: A comparative study of LLMs in the travel industry. *arXiv preprint arXiv* :2404.17975.

Brown, T.B. , Mann, B. , Ryder, N. , Subbiah, M. , Kaplan, J. et al. (2020). Language models are few-shot learners. *Proceedings of NeurIPS*.

Chhun, C. , Suchanek, F.M. and Clavel, C. (2024). Do language models enjoy their own stories? Prompting large language models for automatic story evaluation. *Transactions of ACL (to appear)*.

Dettmers, T. , Lewis, M. , Belkada, Y. and Zettlemoyer, L. (2023). QLoRA: Efficient finetuning of quantized LLMs. *arXiv preprint arXiv*:2305.14314.

Dimlo, U.F. , Rupesh, V. and Raju, Y. , (2024). The dynamics of natural language processing and text mining under emerging artificial intelligence techniques. *International Journal of System Assurance Engineering and Management*, 15(9), pp.4512–4526.

Fan, A. , Lewis, M. and Dauphin, Y. (2018). Hierarchical neural story generation. *Proceedings of NAACL*.

Guan, J. and Huang, M. (2020). UNION: An unreferenced metric for evaluating open-ended story generation. *Proceedings of EMNLP*.

Guan, J. , Wang, X. , Zhang, Z. and Huang, M. (2021). OpenMEVA: A benchmark for evaluating open-ended story generation metrics. *Proceedings of ACL*.

Houlsby, N. , Giurgiu, A. , Jastrzebski, S. , Morrone, B. , De Laroussilhe, Q. , Gesmundo, A. et al. (2019). Parameter-efficient transfer learning for NLP. *Proceedings of ICML*.

Hu, E.J. , Shen, Y. , Wallis, P. , Allen-Zhu, Z. , Li, W. et al. (2021). LoRA: Low-rank adaptation of large language models. arXiv preprint arXiv:2106.09685.

Hugging Face . (2025). distilbert/distilgpt2. Hugging Face Model Card. Available at: https://huggingface.co/distilbert/distilgpt2.

Ke, P. , Chen, X. , Wang, L. , Lin, Y. and He, B. (2022). CTRLEval: An unsupervised reference-free metric for evaluating controlled text generation. *Proceedings of ACL*.
Li, J. , Galley, M. , Brockett, C. , Gao, J. and Dolan, B. (2016). A diversity-promoting objective function for neural conversation models. *Proceedings of NAACL*.
Li, X.L. and Liang, P. (2021). Prefix-tuning: Optimizing continuous prompts for generation. *Proceedings of ACL/IJCNLP*.
Lin, C. (2004). ROUGE: A package for automatic evaluation of summaries. *Workshop on Text Summarization*.
Papineni, K. , Roukos, S. , Ward, T. and Zhu, W.J. (2002). BLEU: A method for automatic evaluation of machine translation. *Proceedings of ACL*.
Radford, A. , Narasimhan, K. , Salimans, T. and Sutskever, I. (2019). Language models are unsupervised multitask learners. *OpenAI*.
Soni, V. (2023). Large language models for enhancing customer lifecycle management. *Journal of Empirical Social Science Studies* 7(1): 67–72.
Sutskever, I. , Vinyals, O. and Le, Q.V. (2014). Sequence to sequence learning with neural networks. *Proceedings of NIPS*.
Touvron, H. , Lavril, T. , Izacard, G. , Martinet, X. , Lachaux, M. et al. (2023). LLaMA 2: Open foundation and fine-tuned chat models. *arXiv preprint arXiv*:2307.09288.
Trichopoulos, G. , Konstantakis, M. , Alexandridis, G. and Caridakis, G. (2023). Large language models as recommendation systems in museums. *Electronics* 12(18): 3829.
Vaswani, A. , Shazeer, N. , Parmar, N. , Uszkoreit, J. , Jones, L. , Gomez, A.N. , Kaiser, Ł. and Polosukhin, I. (2017). *Attention is all you need. Proceedings of NeurIPS*.
Xu, P. and Wang, D. (2025). Can large language models trigger a paradigm shift in travel behavior modeling? Experiences with modeling travel satisfaction. *arXiv preprint arXiv*:2505.23262.
Zhang, T. , Kishore, V. , Wu, F. , Weinberger, K. and Artzi, Y. (2020). BERTScore: Evaluating text generation with BERT. *Proceedings of ICLR*.
Zhu, Y. , Lu, S. , Zheng, L. , Guo, J. , Zhang, H. et al. (2018). Texygen: A benchmarking platform for text generation models. *Proceedings of AAAI*.

SELFIES-based adversarial autoencoder framework for de novo drug-like molecule generation

Alberga, D. , Lamanna, G. , Graziano, G. , et al. (2024). DeLA-DrugSelf: Empowering multi-objective de novo design through SELFIES molecular representation. *Computers in Biology and Medicine*, 108486. https://doi.org/10.1016/j.compbiomed.2024.108486
Albrijawi, M.T. and Alhajj, R. (2024). LSTM-driven drug design using SELFIES for target-focused de novo generation of HIV-1 protease inhibitor candidates for AIDS treatment. *PLoS One*, 19(6), p.e0303597. https://doi.org/10.1371/journal.pone.0303597
Akkepalli, S. and Sagar, K. , (2025). Copula entropy regularization transformer with C2 variational autoencoder and fine-tuned hybrid DL model for network intrusion detection. *Telematics and Informatics Reports*, 17, p.100182.
Ghaemi, M.S. , Hu, H. and Hu, A. (2023). CHA2: CHemistry aware convex hull autoencoder towards inverse molecular design. *arXiv preprint*, arXiv:2302.11000. https://doi.org/10.48550/arXiv.2302.11000
Kadurin, A. , Aliper, A. , Kazennov, A. , et al. (2017). The cornucopia of meaningful leads: Applying deep adversarial autoencoders for new molecule development in oncology. *Oncotarget*, 8(7), pp.10883–10890. https://doi.org/10.18632/oncotarget.14073
Kadurin, A. , Nikolenko, S.I. , Khrabrov, K. , et al. (2017). druGAN: An advanced generative adversarial autoencoder model for de novo generation of new molecules with desired molecular properties in Silico. *Molecular Pharmaceutics*, 14(9), pp.3098–3104. https://doi.org/10.1021/acs.molpharmaceut.7b00346
Kang, S. and Cho, K. (2019). Conditional molecular design with deep generative models. *Journal of Chemical Information and Modeling*, 59(1), pp.43–52. https://doi.org/10.1021/acs.jcim.8b00263
Krenn, M. , Häse, F. , Nigam, A. , Friederich, P. and Aspuru-Guzik, A. (2019). SELFIES: A robust molecular string representation. *Machine Learning: Science and Technology*, 1(4), p.045024. https://doi.org/10.1186/s13321-019-0397-9
Obi, E. , Yentumi, J.A. , Mbatuegwu, D. , et al. (2024). LAIgnd: Revolutionizing drug discovery with advanced ai-driven molecule generation. *Advances in Multidisciplinary and Scientific Research Journal*, 15(3), pp.45–62. https://doi.org/10.22624/aims/cisdi/v15n3p4
Prykhodko, O. , Johansson, S.V. , Kotsias, P.-C. , et al. (2019). A de novo molecular generation method using latent vector based generative adversarial network. *Journal of Cheminformatics*, 11, p.74.

https://doi.org/10.1186/s13321-019-0397-9
Tang, H. , Li, C. and Morimoto, Y. (2024). When molecular GAN meets byte-pair encoding. *arXiv preprint, arXiv*:2409.19740. https://doi.org/10.48550/arXiv.2409.19740