ICATEM'24 Team

SAVEETHA ENGINEERING COLLEGE

AUTONOMOUS

AFFILIATED TO ANNA UNIVERSITY

Taylor & Francis

Saveetha Overseas Conference

2nd International Conference on

Advanced Technology in Engineering & Management - ICATEM 2024

March 18 - 25, 2024 @ Dubai & Abu Dhabi

in association with

NMV UNIVERSITY

DE MONTFORT UNIVERSITY DUBAI

ICATEM

creating technology tommorrow

Saveetha Overseas Conference

ICATEM

creating technology tommorrow

2nd International Conference on

Advanced Technology in Engineering & Management - ICATEM 2024

March 18 - 25, 2024 @ Dubai & Abu Dhabi

in association with

NMV UNIVERSITY

DE MONTFORT UNIVERSITY DUBAI

Proceedings

2nd International Conference on

Advanced Technology in Engineering & Management - ICATEM 2024

March 18 - 25, 2024 @ Dubai & Abu Dhabi

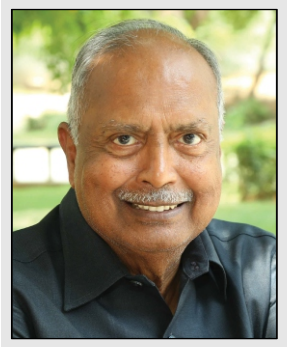
Published by

Saveetha Engineering College

&

Taylor & Francis

FOUNDER PRESIDENT'S MESSAGE



The International Conference on "Advanced Technology in Engineering and Management- ICATEM '24"- takes an in-depth look at the many issues raised by Electronic Technology today, This conference is a step towards achieving our vision in becoming a world-class academic and research institution in order to produce human capital with first class mentality. Research in Advanced Technology in Engineering and management is exciting as it comprise of traditional research areas in Computer Science, Electronics, Mechanical Systems, Networks , Software Engineering and Management Studies.

This conference will be a good starting point for colleges and International Universities to interchange knowledge and skills in the area of Engineering and Management. We are looking forward to and new solutions in this area and forecast future trends in order to realize India's aspiration and to contribute to global needs. It is a great pleasure to welcome all delegates and participants to this conference, coming from near and far. I would like to congratulate all the departments for their commitment and superb drive in organizing this overseas conference. I am very certain that this occasion will be able to provide a platform towards strengthening our relationships in knowledge sharing while at the same time provide the necessary thrust in joint research collaborations and product commercialization within the research society.

It is my aspiration that this overseas conference will be a foundation for the growth of new ideas towards a better tomorrow. Last but not least, I would also like to thank all the conference industry sponsors. With your continued support and interest in us, I am sure that the quest of making SEC a top class college is not going to be impossible to achieve. Thank you.

Dr. N. M. Veeraiyan
Founder President

DIRECTOR'S MESSAGE

The International Conference on ICATEM'24 provides a platform to bring together not only researchers, postgraduate students but also industrial people. With this platform, ICATEM will embark on a whole process of making new discoveries and then transforming them into products and services for the market place and this is only made possible with people like all of you.

I would like to congratulate the ICATEM'24 organizers for the achievement of collecting papers for this conference. Submissions received from colleges at National and International levels and Industrial delegates is a great achievement . As one of Chennai's best colleges, SEC's main challenge is to remain competitive and relevant by offering high quality technical academic programmes and research activities, focusing on its niche areas. New knowledge and findings cannot be generated without any research and development (R&D) activities. These efforts will undoubtedly generate lots of interesting results and new knowledge leads to further commercialization activities.

On behalf of SEC, I would like to express my appreciation to all committee members of ICATEM 2024 for their hard work and relentless effort. Without their commitment and contributions, this event would not been possible and successfully delivered at this time.

I wish you all a fruitful discourse. Thank you.

Dr. S. Rajesh
Director

PRINCIPAL'S MESSAGE

It is my great pleasure to welcome you to the The International Conference on Advanced Technology in Engineering and Management - ICATEM 2024 which takes place in DE Montfort University, Dubai.

The facts of Science, Technology, Management and Engineering are changing very fast. Engineering and Technology are becoming increasingly multi- disciplinary and calls for multi-institutional and in several cases, multi- country participation. Major experimental facilities, even in several areas of basic research, require very large material, human and intellectual resources. Science and Technology have become so closely intertwined, and so reinforce each other that, to be effective, any policy needs to view them together. The continuing revolutions in the held of Science, Engineering and Management have had profound impact on the manner and speed with which scientific information becomes available, and scientific interactions take place.

The SEC campus is always a buzz with a plethora of activities and has become a dynamic venue where brilliant minds from all over the world converge and share their vast reserves of knowledge and skills. It gives me immense pride to state that as a result of the collective effort of the faculty, students and staff over the past few years SEC today ranks among the top technical institutions of the country. I am hopeful of its acquiring greater heights in the years to come.

The various conferences, training programs and workshops in this quarter here are focused on relevant areas. Education is what we imbibe-from our books, our peers, our teachers and our surroundings. As we move towards our goals, we must always keep in mind that we owe more to the world than it owes us. Each of us can and must do his or her bit to help build a universe that will nurture our future generation. I must thank all the contributors, reviewers and experts from SEC, DE Montfort University for their unconditional support in organizing this conference. I congratulate ICATEM'24 team for their tremendous effort in organizing an event of this grandeur. I congratulate all the researchers and students for their commitment and active participation and wish you all the success.

Dr. V. Vijaya Chamundeeswari
Principal

MESSAGE FROM DEMONTFORT UNIVERSITY

It is with great pleasure that DeMontfort University UAE extends warm greetings to all attendees of the The International Conference on Advanced Technology in Engineering Management - ICATEM '24. As a leading institution dedicated to excellence in education and research, we are honored to be part of this esteemed gathering of academics, researchers, and industry professionals. This conference serves as a testament to our collective commitment to advancing knowledge and innovation in the fields of engineering and management.At DeMontfort University UAE, we recognize the importance of fostering collaboration and knowledge exchange to address the complex challenges facing our society today. Through initiatives like this conference, we aim to create a platform for meaningful dialogue, exploration of new ideas, and forging of valuable partnerships.As you engage in insightful discussions, share your research findings, and explore emerging trends, we encourage you to seize this opportunity to expand your networks, broaden your perspectives, and contribute to the advancement of your respective fields.We extend our sincerest thanks to the organizing committee for their tireless efforts in bringing this event to fruition, and to all participants for their invaluable contributions. Together, let us embark on a journey of discovery, learning, and innovation.Wishing you all a productive and enriching experience at the conference.

CONVENOR MESSAGE
FROM DE MONTFORT UNIVERSITY

It is with great pleasure and enthusiasm that I extend a warm welcome to all participants of the International Conference on Advanced Technology in Engineering Management (ICATEM) 2024.

As the convenor of this prestigious conference, I am delighted to witness the coming together of esteemed academics, researchers, and industry professionals from around the world to exchange knowledge, share insights, and explore the latest advancements in engineering and management.

ICATEM 2024 promises to be an enriching and enlightening experience, with a diverse range of presentations, workshops, and discussions covering various verticals in engineering and management. Our aim is to create a platform for meaningful dialogue and collaboration, fostering innovation and driving positive change in our respective fields.

I would like to express my gratitude to the organizing committee, sponsors, and partners for their tireless efforts in making this conference possible. Your dedication and commitment are truly commendable, and I am confident that together, we will make ICATEM 2024 a resounding success.

To all participants, I encourage you to actively engage in the sessions, network with your peers, and seize the opportunity to learn and grow. Let us embrace this opportunity to inspire one another, push the boundaries of knowledge, and contribute to the advancement of our fields.

Dr. Muhammad Rukunuddin Ghalib
De Montfort University, Dubai

CO-CONVENOR MESSAGE
FROM DE MONTFORT UNIVERSITY

It is my privilege and pleasure to extend a warm welcome to all esteemed participants of the International Conference on Advanced Technology in Engineering Management - ICATEM 2024.

As the Co-Convenor of this esteemed conference, representing De Montfort University, I am honored to be part of this gathering of distinguished academics, researchers, and industry professionals. Together, we have the opportunity to engage in meaningful discussions, exchange ideas, and explore the latest advancements in engineering and management.

ICATEM 2024 provides a unique platform for collaboration and knowledge sharing across diverse verticals in engineering and management. It is a testament to our collective commitment to advancing research, innovation, and education in our respective fields.

I would like to express my sincere appreciation to the organizing committee for their dedication and hard work in orchestrating this event. Their efforts have been instrumental in ensuring the success of ICATEM 2024.

To all participants, I encourage you to actively participate in the sessions, contribute your insights, and forge new connections. Let us seize this opportunity to inspire one another, foster collaboration, and drive positive change in our communities and beyond.

I am confident that ICATEM 2024 will be a rewarding and enriching experience for all involved, and I look forward to fruitful discussions and fruitful collaborations.

Dr. Sayed Saeed Ahmed
De Montfort University, Dubai.

CONFERENCE CHAIR'S MESSAGE

The idea behind the conduction of International Overseas Conference in the field of Advanced Technology in Engineering and Management is to create the atmosphere of research in students and young faculty members. Research oriented attitude is the demand of time. With the ardent support of our visionary President Dr.N.M.Veeraiyan and Director Dr.S.Rajesh, Saveetha Engineering College is emerging as an excellent source of knowledge and a place where innovative ideas originate.

The International conference on Advanced Technology in Engineering and Management – ICATEM 2024 will provide an excellent forum to bring together researchers, young scientists, and students to discuss the latest advances in the field of information and Communication.

We congratulate the Conference Coordinators of ICATEM 2024 for their tireless efforts in arranging this conference in an International platform. We are confident that with our dedicated, qualified and well experienced faculty, we will be able to achieve our goal and provide quality forum, as always.

Dr. Srigitha S. Nath
Associate Dean | ECE, BME, Med.Elec &
Professor and Head

Dr. S. Praveen Kumar
Professor, ECE

PROGRAM CHAIR'S MESSAGE

Saveetha Engineering College takes pride in conducting our Second International Overseas Conference on Advanced Technology in Engineering and Management- ICATEM 2024 in collaboration with DE Montfort University, Dubai. The purpose of conducting International Conference in collaboration with overseas universities are to benefit the staff and students to present their papers in foreign University and also to enable both of us to better understand our culture, which facilitates our marketing success.

Our Institution's one of the mission's is to form global partnerships and foster relationships with other institutions. We are confident that such collaboration with foreign universities will enable us to exchange our academic ideas, and help us to debate and share Experience for academic and scientific accomplishment.

Dr. N. Raja Rajeswari
Associate Dean - Student Affairs &
Professor, Mech

Dr. G. Nalinipriya
Associate Dean - International Relations &
Professor, IT

ORGANIZING CHAIR'S MESSAGE

We are indeed most delighted to be given the opportunity to organize this The Overseas International Conference on Advanced Technology in Engineering and Management - ICATEM '24 . As organizing chair of this event, we hope to bring together a good program that stimulates both technical knowledge and scientific intellect.

This will be a combination of interesting lectures and well researched paper presentations that will enrich our current knowledge and technical skills. A holistic and interactive approach has been employed in planning the conference in which we shall experience the outcome of the presentations from keynote speakers and technical papers submitted by students and research scholars from various esteemed institutions.

Building quality in technical education is the dream and aspiration of all educational institutions across the region which is looking at a future for themselves. The involvement of Saveetha Engineering College in the quality movement for technical education took shape with the initiative of our President Dr. N. M. Veeraiyan and Director Dr. S. Rajesh.

On behalf of the organizing committee, we wish the conference ICATEM 2024 to be a positive contribution towards building talent and also to enrich knowledge

Dr. T. Aravind
Professor, ECE

Dr. M. Vanitha
Professor, ECE

ORGANIZING SECRETARY MESSAGE

It is indeed a great privilege for us to host the The Overseas International Conference on Advanced Technology in Engineering and Management - ICATEM 2024 in DE Montfort University, Dubai I extend my hearty welcome to all the resource persons and delegates participating in the conference. The main objective of this conference is to provide the platform for exchange of knowledge, to share innovative ideas, to gain experience in the field of Artificial Intelligence, Computer, Electrical, Electronics & Communication, Mechanical, Chemical and Bio Technology and Management which play a major role in meeting the demands and helps in providing solution for industries.

I take this opportunity to thank Dr. N. M. Veeraiyan, President & Chancellor, Saveetha University for his valuable support and encouragement. I thank patron Dr.V.Saveetha Rajesh, Director, The Pupil Saveetha Eco School who has been a powerful spectator and guide to our activities. I express my heartfelt thanks to our Director Dr.S.Rajesh, for his continuous and moral support to all our endeavor. I also thank our co-patron Dr. V. Vijaya Chamundeeswari, Principal SEC for her unconditional support and sharing his valuable suggestions. I wish to express my deepest gratitude to Dr. N. Raja Rajeswari, Associate Dean - Student Affairs & Professor, Mech, Dr. G. Nalinipriya, Associate Dean - International Relations & Professor, IT, Dr. Srigitha S. Nath, Associate Dean | ECE, BME and Medical Electronics, Professor and Head Dr. S. Praveen Kumar, Professor, ECE for shaping and organizing this conference with due motivation and support.

I also wish to express my gratitude to all the faculty members of the department as well as the Institution, students and participants for making this conference a huge success.

Ms. T. Archana
Assistant Professor, ECE

COORDINATORS MESSAGE




On behalf of the Organizing Committee, it is our pleasure to welcome you to The International Conference on Advanced Technology in Engineering and Management - ICATEM' 24. We thank our management to give this delightful opportunity for organizing this conference. We are the most indeed very happy to have the sophisticated and wonderful technical and non-technical committee as a backbone for this conference.

We are the most delighted to inspire participants from a wide array of themes to initiate collaborations within and across disciplines for the Advancement of Engineering and Management field. We hope this platform will definitely explore all the participants and coordinators in the technical field. We thank the chief guest, keynote speakers, session chairs, faculty and participants for helping us to build this very exciting event.

Dr. P. Baraneedharan
Associate Professor, ECE

Dr. J. Jeffin Gracewell
Associate Professor, ECE

Mr. S. Joyal Isac
Assistant Professor, EEE

Dr. M. Deepa
Assistant Professor, MBA

PUBLISHING CHAIRS MESSAGE

The experience gained from the Second International conference on “Advanced Technology in Engineering and Management” ICATEM ‘24. will be very beneficial this year. More than 200 papers have been received from all over the world. We sincerely convey our hearty congratulations to all the members, teaching as well as non-teaching staffs, who have made the name of Saveetha Engineering College to reach globally. We have gained very rich experience in organizing this International Conference, and it is motivating and encouraging us to conduct more conferences in the forthcoming years. We hope that all Indian as well as foreign delegates will get valuable thoughts during this conference. We also wish their stay to be joyful and beneficial.

Dr. Balamurugan Balusamy
Associate Dean - Student Engagement
Shiv Nadar University, Delhi

ABOUT SAVEETHA ENGINEERING COLLEGE

Saveetha Engineering College, a renowned institution for Engineering education and research was started in the year 2001 by Saveetha Medical & Educational Trust. The Saveetha group of Institutions is headed by Dr. N. M. Veeraiyan, a committed and dedicated medical professional. The college is located at about 8 Kms from Poonamallae and is laid amidst a serene environment. It offers 15 UG Courses and 8 PG courses. The excellent infrastructure and well equipped laboratories with the state of the art facility that includes facilities of recent technologies like AI, ML, DS, IoT, 3D Printing, Cyber Security, and Robotics. Our College is equipped with world fastest GPU, NVIDIA H100 DGX. The College is ranked by NIRF and accredited by NBA and NAAC with A grade also ISO 9001:2015 certified. The college motto, BE THE BEST carries a message to the students that they should aim for the best in education, culture and achievement. It is recognized as a Scientific and Industrial Research Organization (SIRO) by the Department of Scientific and Industrial Research (DSIR), Government of India Five Research Centres recognized by Anna University and MoU's with Reputed Academic Institutions in India and Abroad.

Vision

To be and to be recognized for setting the standard of Excellence in Engineering education and high quality research in Science and Technology.

Mission

To promote academic excellence; widen intellectual horizon; self-discipline and high ideals for the total personality development of the individual

ABOUT DE MONTFORT UNIVERSITY

De Montfort University Leicester (DMU) is a dynamic institution with a long and vibrant history of improving people's lives through education.Originally founded as the Leicester School of Art in 1870, the university has evolved through many incarnations including the Leicester Colleges of Art and Technology and Leicester Polytechnic.

Leicester Polytechnic officially became De Montfort University on 26 June 1992. The name was chosen to reflect the university's long association with Leicester by commemorating the celebrated Simon de Montfort, Earl of Leicester, a crucial figure in medieval history who established the first parliament in 1265.

Our reputation for quality and distinctiveness in teaching and research is a direct result of our heritage. Many modern DMU courses have their roots in the late 19th century and early 20th century, when the School of Art and Leicester Technical School began training apprentices for local industries, such as boot and shoe manufacture, furniture making and design, hosiery, and textiles manufacture, engineering, printing, and bookbinding.

Art, pharmacy, corsetry, footwear, physical sciences, and architecture were taught at the schools and are still in evidence at DMU today, either as courses in their own right or as integral components of more contemporary courses.A commitment to ensuring teaching kept pace with the changing needs of businesses meant that computing courses were introduced in the 1960s, and DMU's computing degrees are still highly valued by industry.The university has grown and evolved over the years, but it is still dedicated to providing inspirational teaching to students and is proud to have a significant impact on the world around it.

ABOUT THE CONFERENCE - ICATEM'24

2nd International Conference on

Advanced Technology in Engineering & Management - ICATEM 2024

March 18 - 25, 2024 @ Dubai & Abu Dhabi

The ICATEM'24 is the Second Overseas International Conference on Advanced Technology in Engineering & Management which aims at Computer cience, Electrical, Electronics & Communication, Instrumentation, Mechanical Engineering, Chemical, Bio Technology and Management Specialists plays a major role in meeting the demands from the industries. This is to identify and provide feasible solutions to meet ever growing challenges in the field of MEMS, Microelectronics, Nano systems, Artificial Intelligence, Web Technology, Cloud Computing, Cyber Security and Forensics, Grid system, Switch Gear and Protection, Material and Failure Analysis, Fluid Mechanics, and also in the field of Management areas - Finance, Marketing, Human Resource, Operations, Logistics, Supply Chain etc., The primary goal of this conference is to provide a platform to exhibit the budding developments in the above fields and also intend to bring eminent academicians, researchers, scientists, engineers, Management Experts and students to share their knowledge. This will help in bringing out the innovative ideas and research outputs of the engineers and Management consultants related to the conference theme.

ORGANISING TEAM

KEYNOTE SPEAKERS

Prof. Dr. Chithirai Pon Selvan

Head of Faculty | Director of Research,
Head of School-Science and Engineering
Curtin University, Dubai.

Driving Sustainability Forward: The Importance of Research and Innovation

Research and innovation are crucial in driving sustainability, addressing climate change, and promoting resource efficiency. By fostering innovative solutions, we can develop sustainable technologies, reduce environmental impact, and ensure a greener future. This pursuit not only protects our planet but also propels economic growth and societal well-being.

Dr. Ganesan Subramanian

Head - Centre for Innovation & Entrepreneurship
Manipal Academy of Higher Education Dubai,
United Arab Emirates.

Blockchain and AI Future Direction, Opportunities in the middle east region

Blockchain and AI present transformative opportunities in the Middle East, fostering innovation in finance, healthcare, and smart cities. The region's investment in these technologies aims to enhance data security, streamline operations, and drive economic diversification, positioning the Middle East as a global hub for technological advancement and sustainable development.

Dr. Balamurugan Balusamy

Associate Dean - Students
Shiv Nadar University,
Delhi-NCR Campus, Noida, India

Deep Learning Techniques in Health Care AI

Deep learning revolutionizes healthcare by improving diagnostics with image analysis, personalizing treatment through genomics, analyzing electronic health records for better decision-making, accelerating drug discovery, and enhancing patient monitoring via wearable devices. Challenges include data privacy, model interpretability, and the demand for large datasets. Addressing these ensures ethical and effective application.

ICATEM 2024

21st March 2024 – De Montfort University, Dubai

PROGRAM SCHEDULE

Master of Ceremony: Ms. T. Merlin Inbamalar & Ms. K. Padmapriya
10: 00 – Inauguration, About ICATEM ‘24
10: 05 – Invocation
10: 10 – Welcome Address – Dr. Srigitha. S. Nath, Conference Chair, ICATEM ’24.
10:15 – Special Address – Dr. G. Nalinipriya, Program Chair, ICATEM ’24.
10:20 – Video about SEC & ICATEM
10:25 – Introduction & Felicitation of Chief Guest
10: 30 - Chief Guest Address
Prof. Michael Gallimore, Head Campus, De Montfort University.
Prof. Simon Bradbury, Pro Vice Chancellor International, De Montfort University.
10: 40 - Guest of Honour
Mr. Krishna Kumar C.N, Vice President, Study World Education Group, Dubai
10:45 – Souvenir Release
10: 50 – Key Note Address
Dr. Chithirai Pon Selvan, Curtin University, Dubai.
Dr. Ganesan Subramanian, Manipal Academy of Higher Education, Dubai.
Dr. Balamurugan, SSN University, New Delhi.
11: 10 – Paper Presentation
Track 1 – Session Chairs: Dr. V. Jeyalakshmi & Dr. K. Suresh Kumar
Track 2 – Session Chairs: Dr. Deepa Natesan & Dr. T. Jaya &
Track 3 – Session Chairs: Dr. K. Kalaichelvi & Dr. Vanitha A
12:15 – Awards & Certificate Distribution
12:40 – Vote of Thanks - Dr. Muhammad Rukunuddin Ghalib, De Montfort University.
12:45 – National Anthem

ICATEM COUNCIL

Chief Patron
Dr. N. M. Veeraiyan
Founder President & Chancellor, Saveetha Institute of Medical And Technical Sciences

Patrons
Dr. V. Saveetha Rajesh,
Director, NMV University
Dr. S. Rajesh,
Director, SEC

Co-Patrons
Dr. K. R. Sundaravaradarajan,
Vice Chancellor, NMV University
Dr. V. Vijaya Chamundeeswari,
Principal
Dr. R. Senthil Kumar,
HOD and Vice Principal

Program Chair
Dr. N. Raja Rajeswari,
Associate Dean - Student Affairs & Professor, Mech
Dr. G. Nalinipriya,
Associate Dean - International Relations & Professor, IT

Conference Chair
Dr. Srigitha S. Nath,
Associate Dean | ECE, BME and Medical Electronics, Professor and Head
Dr. S. Praveen Kumar,
Professor, ECE

Organizing Chair
Dr. T. Aravind,
Professor, ECE
Dr. M. Vanitha,
Professor, ECE
Program Head
Ms. M. Kalpana,
Associate Professor & Head, CIVIL
Ms. T. Merlin Inbamalar,
Associate Professor & Head, EIE
Conference Head
Dr. G. Manimaran, Professor, Mech
Dr. A. Vanitha, Associate Professor, MBA
Publicity Chair
Dr. Balamurugan Balusamy,
Associate Dean - Student Engagement
Shiv Nadar University, Delhi

Organizing Secretaries
Dr. V. Muthukumar,
Professor, Mech
Ms. T. Archana,
Assistant Professor, ECE
Heads-Registration & publishing
Dr. K. Suresh Kumar,
Professor and Head, IT
Dr. V. Anandan,
Associate Professor & Head, Maths

Organizing Heads
Dr. A. Tajuddin,
Professor and Head, Agri
Dr. Karthi Govindharaju,
Associate Professor & Head, Artificial Intelligence & Data Science
Dr. M. Moorthi,
Professor & HOD, BME & Med
Dr. A. Balasubramanian,
Associate Professor & HOD, Chemical
Dr. G. Nagappan,
Professor & Head, CSE
Dr. P. Rajkumar,
Professor and Head, MBA
Dr. N. Balaji,
Professor & Head, Mechanical
Dr. L. Sangeetha,
Associate Professor & Head, Physics
Dr. M. Mettilda,
Professor & Head, Chemistry
Dr. A. Anne Dorathy,
Associate Professor & Head i/c, English

Coordinators
Mr. S. Joyal Isac,
Assistant Professor, EEE
Dr. P. Baraneedharan,
Associate Professor, ECE
Dr. J. Jeffin Gracewell,
Associate Professor, ECE
Dr. M. Deepa,
Assistant Professor, MBA

Co-Coordinators

Mr. K. Arunkumar,
Assistant Professor, ECE
Ms. K. Padma Priya,
Assistant Professor, NMV
Ms. K. S. Rekha,
Assistant Professor, NMV

Organizing Committee

Dr. M. Priya,
Professor, S&H
Dr. M. Vijay Anand,
Professor, CSE
Dr. S. Kalpana,
Professor, Physics
Advisory Committee
Dr. Shengesh Chetty,
Professor, MDIS
Dr. Lee Ching Kwang,
Multimedia University Malaysia
Dr. M. M. Nayak,
IISc, Bangalore
Dr. Sanjeev Srivatsava,
IISc, Bangalore
Dr. Nasrul Humaimi,
University Teknologi, Malaysia
Dr. P. Velraj Kumar,
Multimedia University Malaysia
Dr. Pradyumna T,
Cambridge University
Dr. Alex NoelJoseph Raj,
Shant ou University China
Dr. Chandramohan,
Anna University, Chennai
Dr. S. Suresh,
NIT, Trichy
Dr. L. Sujatha,
Rajalakshmi Engineering College
Dr. K. Suresh Manic,
National University of
Science and Technology , Muscat.
Mr. GuruDutt, MD,
Sridutt Tech. Solutions, Bangalore
Dr. V. Subbiah Bharathi,
Dean, SRM University
Dr. S. Selvakumar Raja,
Principal,KITSW, Nizamabad
Dr. Antony Michael Raj,
Principal, LICET
Dr. D. Dhanasekaran,
Principal, Saveetha University
Dr. A.UmaMakeswari,
Associate Dean, Sastra University
Dr. John Alexis,
KCET, Coimbatore.
Dr. V. Thulasi Bai,
KCG College of Engineering
Dr. C. Sheeba Joice,
Deputy Head, ECE, SEC
Dr. S. Dhandapani,
Deputy Head, ECE, SEC
Dr. M. Selvi,
Professor, ECE, SEC
Dr. S. Chitra,
Vice Principal,
Saveetha Medical College,
Chennai
Dr. Muhammad Rukunuddin Ghalib,
De Montfort University, Dubai
Dr. Sayed Saeed,
De Montfort University, Dubai
Dr. Ramani Kannan,
University Teknologi Petronas, Malaysia
Dr. V. D. Ambeth Kumar
Mizoram University, Mizoram
Dr. Ts. Chockalingam Aravind
Vaithilingam, Taylor's University,
Malaysia
Dr. M. Prakash,
NIT, Nagaland

ICATEM24
BMI001

IMPACT OF OBESITY WITHIN THE FRAMEWORK OF BONE MINERAL DENSITY: A SOUTH INDIAN PERSPECTIVE

[1] Kishore Mohan K.B, [2]Moorthi M, [3]Yuvashreedevi, [4] Keerthipriya, [5] Durga

[1, 2] Associate Professor, Department of Biomedical Engineering, Saveetha Engineering College, Thandalam, Chennai

[3,4 and 5] Students, Saveetha Engineering College, Thandalam, Chennai

ABSTRACT

Recent evidence demonstrating an increased fracture risk among obese individuals suggests that adipose tissue may negatively impact bone health, challenging the traditional paradigm of fat mass playing a protective role towards bone health. White adipose tissue, far from being a mere energy depot, is a dynamic tissue actively implicated in metabolic reactions, and infact secretes several hormones called adipokines and inflammatory factors that may in turn promote bone resorption. Anthropometry, Body Composition Analysis by (BIA based BCA), AEI, Statistical Analysis, Measurement of bone mineral content, BMD and body composition, Total Body Bone Densitometer (DPX Prodigy DXA Scanner, GE-Lunar, USABMI (Body Mass Index) evidenced to exhibit positive correlation with respect to BMD (Bone Mineral Density), Sig. (2-tailed) 0.001.

ICATEM24
IP002

CONTOUR GENERATOR AND STYLE TRANSFER OF MURAL PAINTINGS USING CYCLE GAN CONTOUR GENERATOR AND STYLE TRANSFER OF MURAL PAINTINGS USING CYCLE GAN

[1] Meenatchi KV, [2] Padma Priya K, [3] Rekha K S, [4] Sangeetha Priya M

[1] Department of Artificial Intelligence and Machine Learning, Institute of Science and Technology, *NMV University,* Chennai, India

[2] Department of Electronics and Communication Engineering, Saveetha Engineering College, Chennai, India

[3, 4] Department of Computer Science and Engineering,, Saveetha Engineering College, Chennai, India

ABSTRACT

India is known for its cultural diversity and is home to several heritage sites. There was a period when many art forms flourished and mural paintings, sculpting, singing and dancing are some of them. Currently, India has more than 20 locations containing mural painting and most of these are caves and rock cut chambers. These art forms are local and only a few artisans are skilled enough to replicate or imitate them. Thus a technique to artistically transform the style of an image is proposed which involves the creation of two models – Contour Generator and Style Transfer Generator. The paintings are first translated into their respective outlines or sketches. Thus an efficient structural outline, the Contour, of the mural art can be generated using a Cycle Generative Adversarial Network (Cycle GAN). Cycle GAN can be used in an image-to-image translation technique for conversion of images between two domains, here from paintings to sketches. The Style Transfer generator can now transfer any contour into a Mural painting of this style. This way one can create a mural art with just a sketch of the painting. Also one can transform the style of a random picture to a Mural art by using the Contour Generator and style transfer generator. The model when executed successfully will serve for multiple purposes. It can be used to extract the basic structure of an image, fuse the painting with the other and many more.

ICATEM24
AI003

OPTIMIZING WORKFORCE MANAGEMENT: AI'S ROLE IN LOGISTICS INDUSTRY 4.0 TRANSFORMATION

[1] Anitha Kumari. D, [2] Sudha. S, [3] Kabirdoss Devi, [4] Vardhini. V
[1, 3, 4] Associate Professor, School of Management Studies, Vels Institute of Science, Technology & Advanced Studies, Chennai, India
[2] Professor, School of Management Studies, Vels Institute of Science, Technology & Advanced Studies, Chennai,India

ABSTRACT
The use of automation and artificial intelligence (AI) is causing a huge revolution in the logistics sector. These developments have significant effects on human resources (HR) tasks in addition to offering to save expenses and increase operational efficiency. This study examines how automation and artificial intelligence (AI) are affecting human resources (HR) in the logistics industry, outlining potential obstacles and possibilities. Using a mixed-methods approach, the study asks HR professionals and logistics executives questions using quantitative surveys and qualitative interviews. According to the research, HR positions in logistics are already beginning to change as a result of automation and artificial intelligence. Automation of processes like payroll processing and hiring screening has led to worker reallocation and upskilling possibilities. HR managers have difficulties in leading a staff that uses AI-driven systems, requiring new skills in handling human-AI interactions and data-driven decision-making. The paper also identifies potential challenges, such as job displacement, data privacy, and ethical AI usage. The research concludes with practical recommendations for HR practitioners, logistics companies, and policymakers, emphasizing the importance of proactive HR strategies that view automation and AI as tools to enhance the workforce rather than replace it.

ICATEM24
AI004

BEST GREEN PRACTICES IN GLOBAL SUPPLY CHAIN INDUSTRY

[1] Sudha.S, [2] Anithakumari D, [3]Vardhini, [4] Kabirdoss Devi, [5]Dinesh Elango
[1] Professor, Department of MBA, School of Management Studies & Commerce, Vels Institute of Science, Technology and Advanced Studies
[2, 4] Associate Professor, Department of MBA, School of Management Studies & Commerce, Vels Institute of Science, Technology and Advanced Studies
[3] Assistant Professor, Department of MBA, School of Management Studies & Commerce, Vels Institute of Science, Technology and Advanced Studies
[5] Associate Professor, School of Business, American University of Phnom Penh, Phnom Penh, Cambodia

ABSTRACT
Across the world, proactive application of sustainable practices has begun to spread. Sustainability improves the performance of businesses. One tactic for aiming for a competitive advantage is sustainability. When considering the idea of sustainability, it is important to think it in different dimensions. It must be viewed from the perspectives of the social, environmental, and economic spheres. Supply chain management is just one of the many sectors, industries, and businesses that adhere to the sustainability mantra. There is a great deal of potential for complementary benefits from sustainability. Green supply chain practices, one of the contemporary sustainable practices, have been embraced by the supply chain industry. Both environmental degradation and corporate competitiveness are increased by using modern SCM techniques. Research papers have emphasized the application of new technologies such as big data, blockchain, and cloud computing. Green supply chain practices, one of the contemporary sustainable practices, have been embraced by the supply chain industry. Both environmental degradation and corporate competitiveness are increased by using modern SCM techniques. The use of cutting-edge technologies like big data, blockchain, and cloud computing has been emphasized in research papers as a way to improve the sustainability and efficiency of the supply chain sector. For every business, having a competitive advantage has been essential. The integration of digital technologies within businesses can help to improve it and supply chain performance. Industry 4.0 technologies will be used to improve, sustainably, and effectively move the supply chain. One of the crucial resilient innovations is the adoption of more contemporary practices, such as business strategy innovation.

ICATEM24
DM005

A STUDY OF THE ROLE OF SEARCH ENGINE OPTIMISATION IN ONLINE PURCHASES OF WHITE GOODS IN INDIA

[1] Ravimohan Rajmohan, [2] Sangeetha Padmanabhan, [3] Amirtha Ravimohan, [4] Shaik Taufeeq Ahmed
[1, 2] Assistant professor, Saveetha Engineering College, Chennai, India
[3, 4] Students, VISTAS

ABSTRACT

Businesses utilise search engine marketing (SEM) and search engine optimisation (SEO) as marketing techniques to connect with customers through search engine results. The main distinction is that SEO concentrates on improving pages for higher rankings through natural traffic. This is a reference to people who visit websites via search engines like Google or Bing. While SEM provides results almost immediately, SEO takes some time to produce consistent and long-lasting effects. You can easily track the number of clicks and conversions your search engine advertising is bringing in. Even though they are distinct, SEO and SEM collaborate closely. A successful SEM strategy requires a solid SEO foundation. You can raise the exposure of your website and raise your Google Quality Score by optimising your landing pages with keywords.

ICATEM24
ML006

PARAMOV: SMART IOT-BASED PARALYZED PATIENT MONITORING SYSTEM

[1] Deepa.N, [2] Saisanthiya.D
[1,2] Department of Network and Communications, School of Computing, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India.

ABSTRACT

Paralyzed people are unable to communicate their needs since they are unable to speak clearly. Improved communication between patients and caregivers can be achieved with a paralytic smart health system. Combine multiple sensor types, such as pressure, gyroscopes, and accelerometers, to interpret gestures and execute complex hand and finger actions. Continuous data streams track vital signs, activity, sleep patterns, and interactions with the environment. This allows for the early identification of infections, falls, and complications and initiates preventive measures. System sees a distinct future. Imagine tiny, wearing sensors that can monitor ambient elements like pressure sores and even simple movements, in addition to vital indications like temperature and heart rate. Real-time data wirelessly travels to a central hub, acting as a silent monitor over their well-being, eliminating the need for intrusive checks. The smart gloves must provide real-time feedback on finger movements in order to assist caretakers in making informed judgments. The Internet of Things (IOT)-based paralyzed patient health care system is intended to assist patients in communicating with physicians, nurses, or other caregivers while seated at home or at work over the internet. An intuitive user interface makes it simple to monitor and operate the Smart Paralysis Healthcare System. This smart paralysis system has a number of sensors, including as flex, temperature, and accelerometer sensors. Together, these sensors monitor the surrounding environment and the demands of the patients. The data is subsequently sent via Bluetooth or Wi-Fi to a specialized smartphone app, allowing doctors, nurses, or other caregivers to swiftly access and comprehend the user's present state of health. In order to address this issue, we developed a method that lets these people interact using simple gestures. This device could be worn on the finger or designed to fit within a person's clothes.

ICATEM24
AI007

ENHANCING EMOTIONAL INTELLIGENCE THROUGH ARTIFICIAL INTELLIGENCE AND VIRTUAL REALITY TRAINING: A COMPARATIVE STUDY

[1] Delecta Jenifer Rajendren
[1] Assistant Professor, Department of Management Studies, Saveetha Engineering College, Chennai, India

ABSTRACT

Emotional intelligence (EI) plays a crucial role in personal and professional success, influencing various aspects of social interaction, decision-making, and overall well-being. Traditional methods of EI training often lack personalized feedback and immersive experiences, limiting their effectiveness. This study investigates the efficacy of utilizing Artificial Intelligence (AI) and Virtual Reality (VR) technologies for enhancing emotional intelligence skills. A randomized controlled trial was conducted with participants randomly assigned to three groups: (1) AI-based training, (2) VR-based training, and (3) control group. The AI-based training utilized machine learning algorithms to provide personalized feedback and tailored exercises based on participants' emotional intelligence assessments. Participants underwent pre- and post-training assessments using established measures of emotional intelligence, including self-report questionnaires and performance-based tasks. Preliminary results indicate significant improvements in emotional intelligence scores for both the AI-based and VR-based training groups compared to the control group. Moreover, qualitative feedback suggests high levels of engagement and satisfaction with the AI and VR interventions, highlighting the immersive and personalized nature of the training programs. This study contributes to the growing body of research on leveraging technology for enhancing emotional intelligence skills. Findings suggest that AI and VR-based training interventions hold promise for providing effective and engaging methods for developing emotional intelligence in individuals, with potential applications in education, healthcare, and professional development. Further research is warranted to explore the long-term effects and optimal design parameters of AI and VR-based emotional intelligence training programs, as well as their potential integration into broader educational and organizational contexts.

ICATEM24
AI008

INVESTIGATE THE ROLE OF ARTIFICIAL INTELLIGENCE IN MANAGING PEOPLE MANAGEMENT PRACTICES

[1] Deepa Manokaran, [2] Devi Rajesh.M
[1] Assistant Professor, Department of Management, Saveetha Engineering College
Saveetha Nagar, Thandalam, Chennai, Tamil Nadu, India
[2] Research Scholar, Vels Institute of Science Technology and Advanced Studies, Pallavaram, Chennai, India

ABSTRACT

This paper explores the power of Artificial Intelligence in regards to people management practices Various regions have led top to bottom concentrate on man-made reasoning. The world's developing dependence on innovation with regards to globalization stresses how essential it is for organizations to be imaginative and serious. The field of Human Asset The board (HRM), has become more significant than it has at any point been, particularly with regards to employing laborers who can give an association priceless mastery and abilities. With the utilization of state of the art innovation, numerous tasks that were previously finished by hand may now be robotized. A hypothesis covering six significant areas of HRM was laid out trying to close the hole among simulated intelligence and HRM. Human asset arranging and methodology, employing and choosing strategies, ability advancement procedures, execution evaluation, pay examination, and staff commitment the board are a portion of these spaces. The expected utilization of Artificial Intelligence is becoming more and more important in improving the efficacy and efficiency of people management procedures.

ICATEM24
AI009

STRATEGIC HRM IN THE AGE OF AI: UPSKILLING FOR ORGANIZATIONAL TRANSFORMATION

[1] Vanitha. A
[1] Associate Professor, Department of Management Studies, Saveetha Engineering College, Chennai

ABSTRACT

Organizations must change to keep up with the rapidly developing nature of work in an era defined by fast technological innovation. This study suggests that the secret to realizing organizational potential lies in the strategic integration of AI into HRM procedures, especially through all-inclusive upskilling initiatives. By clarifying the mutual benefits of AI and upskilling, the research explores how these components might operate together to promote an environment of ongoing education, adaptability, and creativity in the workplace. The study takes a multifaceted approach, using knowledge from case studies, scholarly literature, and industrial practices. The study aims to offer practical suggestions for HRM practitioners by thoroughly examining AI-driven upskilling. It highlights the crucial role that strategic planning plays in assisting HRM practitioners in managing the opportunities and difficulties that arise from integrating AI into the workplace. In the end, this study hopes to add to the conversation around HRM in the AI era by providing a road map for businesses looking to use upskilling's transformative power for long-term organizational growth.

ICATEM24
ML010

ROAD ACCIDENT AND HOTSPOT PREDICTION USING MACHINE LEARNING ALGORITHM

[1]Vijay Anand.M, [2]Vikram Anand.V
[1]Department of Computer Science and Engineering, Saveetha Engineering College, Chennai, India
[2]U.G Student, Department of Artificial Intelligence and Data Science, Sri Venkateswara College of Engineering, Chennai, India

ABSTRACT

A key field of research in the field of traffic safety is the analysis of the variables that influence traffic accidents. Finding the connections between the accidents is the key to lowering the number of traffic accidents. The road has undergone significant design and management changes as a result of the rise in automobile traffic. In order to avoid the issue, researchers used a machine learning approach to examine the transportation department dataset and ascertain the optimal road selection that does not involve accident forecasting, based on the best accuracy calculations prediction findings. This study aims to compare the predictive power of two methods: random forest (RF) and logistic regression (LR). It also seeks to identify variables that have a significant positive impact on prediction performance, as well as significant variables identified by LR and important variables that are strongly correlated with the severity of traffic accidents. Random Forest was used for severity prediction classification. The suggested method had the highest degree of accuracy, according to the results of a comparison with other categorization strategies. The important variables that have a strong correlation with the seriousness of traffic accidents are found using Random Forest. This study used three prediction evaluation criteria and accuracy to identify the most effective integrated method with the most effective prediction model.

ICATEM24
EE011

ENERGY AUDIT AND ITS CHALLENGES IN CHEMICAL INDUSTRIES

[1]Joyal Isac S
[1]Assistant Professor, EEE, Saveetha Engineering College, Chennai, India

ABSTRACT

As per the energy conservation act2001, energy audit is defined as "The verification, monitoring and analysis of use of energy including submission of technical report containing recommendations for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption". An energy audit is a study of a plant or facility to determine how and where energy is used and to identify methods for energy savings. There is now a universal recognition of the fact that new technologies and much greater use of some that already exist provide the most hopeful prospects for the future. The opportunities lie in the use of existing renewable energy technologies, greater efforts at energy efficiency and the dissemination of these technologies and options. Energy audit is to achieve and maintain optimum energy procurement and utilization, throughout the organization and to minimize energy cost without affecting production and quality. Caustic soda is one of the process of DCW, chemical industry. There are 210 motors in caustic soda plant running in 0.37 to 160KW. The motors above 37KW is taken for energy audit for high power consumption and energy savings in the motors is above than the motors which are running below 37KW. Listing out under utilization motor and valve throttled motor the variable frequency drive and pump impeller trimming techniques to avoid the wastage.

ICATEM24
AI012

IMPACT OF ARTIFICIAL INTELLIGENCE ON VISUAL MERCHANDISING IN THE HYPER COMPETITIVE MARKET

[1] Enock. I, [2] Jayabal.A
[1]Assistant Professor, Department of Commerce, Faculty of Science and Humanities, SRM Institute of Science and Technology, Ramapuram, Chennai.
[2]Associate Professor, Department of Commerce, Faculty of Science and Humanities, SRM Institute of Science and Technology, Ramapuram, Chennai

ABSTRACT

Artificial intelligence (AI) in visual merchandising, has become a disruptive force that is changing methods for success in extremely competitive marketplaces. This paper focuses with the objectives of assess the extent of adoption and utilization of Artificial Intelligence (AI) technologies in visual merchandising in the hyper- competitive markets and to examine the impact of AI-driven visual merchandising on customer engagement, satisfaction, and conversion rates. Artificial intelligence (AI)-powered visual search features simplify the shopping experience by making it easier for shoppers to locate products. AI-driven visual search capabilities and virtual try-on solutions are revolutionizing the shopping experience, enhancing convenience and product discovery. Dynamic pricing algorithms and inventory management optimize operations, while AR applications deepen brand loyalty. AI-driven in-store analytics inform strategic decisions, while A I-generated content maintains a compelling online presence. In this paper the researcher incorporated various statistical tools to measure the data which is chi square analysis, rank analysis and ANOVA. The researcher clearly states importance of AI and its use in visual merchandise. Predictive analytics help retailers anticipate future trends and consumer behaviours, ensuring a competitive edge in hyper-competitive markets. Overall, AI is crucial for innovation, efficiency, and strategic agility in visual merchandising. Artificial intelligence (AI) is revolutionizing visual marketing, improving inventory management, dynamic pricing algorithms, and augmented reality applications. It enhances consumer engagement, improves advertising tactics, and predicts market trends, thereby transforming visual marketing and enabling businesses to thrive in competitive markets. It concludes that artificial intelligence improves client engagement and conversion rates by enabling tailored experiences and targeted product placement through advanced data analysis. Hence the researcher states the usage of AI in Visual Merchandise by having detailed analysis.

ICATEM24
ML013

DYNAMIC CROP RECOMMENDATION USING MACHINE LEARNING TECHNIQUES

[1]Thilakesh Raj. A, [2] Madhura Meenatchi.A, [3] Balamurugan.B, [4]G.Nalinipriya
[1]PG Scholar, University of Technology, Department of IT , Sydney, Australia
[2]UG Scholar, Department of CSE Chennai Institute of Technology, Chennai, Tamilnadu, India
[3]Professor, Department of CSE, Shiv Nadar Institution of eminence, New Delhi, India
[4]Professor, Department of IT, Saveetha Engineering College, Chennai, India

ABSTRACT

Agriculture is an important industry in India. It is essential for the survival and growth of the Indian economy. India is a large producer of a variety of agricultural products. Soil is an important factor in crop cultivation. Soil is a non renewable dynamic natural resource that is necessary for life. So, a recommendation system has been developed that employs machine learning algorithms to recommend the crop that can be harvested in that particular soil. There are several machine learning algorithms available are used in this system., including KNN. The project is to build a recommender system to increase the crop yield. The system helps the young farmers in selecting a suitable crop for their agricultural land based on the required parameters like pH, soil capacity, temperature and humidity, water capacity, N P K level. In this project I have tried to solve problem of Indian Farmers. In this project, I have tried to solve problem of Indian Farmers. In this project we have a data base which is essential for farming and the farmers to know which crop will be best for them to grow in the field. We have a data base of around 2200 lines, on the bases of which we can predict which crop will be the best for the farmers to grow in the field. We can predict for almost 22 different types of crop according to the data.If we can Implement this project on the ground level then it can help our farmers to grow the best crop according to the condition's. If there is a new guy in the field of farming, then it will be easy for him/her to select the best crop for farming.

ICATEM24
AI014

AI - DRIVEN HRM TRANSFORMATION: ENHANCING ORGANISATIONAL PERFORMANCE

[1] Kamali E
[1] Department of Management Studies, Saveetha Engineering College, Chennai

ABSTRACT

Artificial intelligence (AI) has a transformative effect on Human Resource Management (HRM) practices and consequently on organizational performance. With rapid technological advancements, organizations are increasingly turning to AI-powered solutions to streamline HRM processes, enhance decision-making, and optimize workforce efficiency. By analysing existing literature and empirical evidence, this study examines how AI is reshaping traditional HRM functions such as recruitment, training, performance evaluation, and employee engagement. In addition, it explores how AI-driven HRM transformation contributes to overall organizational performance, including improved productivity, innovation, employee satisfaction, and cost efficiency. A comprehensive analysis of the potential benefits, challenges, and ethical considerations associated with integrating AI into HRM is provided in this paper for practitioners, policymakers, and researchers interested in leveraging the full potential of AI to drive organizational success in the digital age.

ICATEM24
TL015

CASE STUDY RESEARCH ON COGNITIVE PARAMETERS TO IDENTIFY THE LEADER IN ENGINEERING LEARNERS IN CLASSROOM MANAGEMENT

[1] Subhashini.R

[1] Assistant Professor, Department of English, Saveetha Engineering College, Chennai

ABSTRACT

In the present scenario, there is a dire need for engineering students to acquire and practice their speaking and professional presenting abilities to advance their careers. The current research paper explored case study research in engineering learners, with a particular emphasis on their presenting abilities. The first semester's research spanned around three months in Communicative English. In classroom management, the facilitator monitored their students while they delivered their instructional material. To test these propositions, the instructor used qualitative data for this case study, the facilitator used the delivery technique as the methodology, and the sample size was roughly 53 (male and female), but only 10 learners were chosen and monitored based on their high potential cognitive factors in this study. The facilitator implemented five intellectual traits to assess learners' leadership abilities. This is a unique assessment technique for tracking individual progress over time throughout an intervention. Finally, emphasize the necessity of developing leadership skills by relating them to professional success. Valuable leadership skills include the ability to delegate, inspire and communicate effectively. These discoveries are examined in terms of both theoretical and practical relevance.

ICATEM24
ER016

IMPACT OF TECHNOLOGY ON ENTREPRENEURIAL ADVENTURE

[1] Jayanth Karthik

[1]Student, Dept. of Commerce, SRM Institute of Science and Technology, Ramapuram

ABSTRACT

This paper investigates the dynamic interplay between technology and entrepreneurial adventure, exploring how technological advancements shape entrepreneurial endeavours in the contemporary business landscape. Drawing upon a comprehensive review of literature from entrepreneurship, innovation management, and technology studies, this study synthesizes key findings and insights to elucidate the multifaceted relationship between technology and entrepreneurship. The study underscores the pivotal role of technology in driving innovation, enabling entrepreneurs to develop novel solutions, disrupt industries, and create value in the marketplace. Furthermore, it examines the implications of technology adoption on entrepreneurial strategies, highlighting the importance of digital literacy, cybersecurity, and regulatory frameworks in shaping entrepreneurial ventures.

ICATEM24
ER016

EXPLORING THE INTERSECTION OF HR AND BLOCKCHAIN: LEVERAGING DECENTRALIZED IDENTITY SYSTEMS FOR SECURE AND EFFICIENT ONBOARDING PROCESS AT HIRE LAB CONSULTANT PVT. LTD.

[1]Sai Krupa
[1]Student, Dept. of Commerce, SRM Institute of Science and Technology, Ramapuram

ABSTRACT

The paper explores the transformative integration of Human Resources (HR) practices with blockchain technology, focusing on revolutionizing employee onboarding at Hire Lab Consultant Pvt. Ltd. The initiative strategically integrates blockchain-powered decentralized identity systems to fortify security, enhance transparency, and optimize efficiency in onboarding. Emphasizing enhanced security, the paper highlights blockchain's role as an incorruptible ledger, mitigating identity theft and fraudulent activities through tamper-resistant identity verification. The exploration also addresses data integrity concerns by leveraging cryptographic principles within block chain to secure personnel records against unauthorized access and manipulation. Efficiency gains are a key focus, with smart contracts automating onboarding procedures, expediting processes, and optimizing HR workflows. Interoperability is highlighted as blockchain facilitates seamless sharing and verification of employee data across HR systems, fostering collaboration and interconnectedness. The scope encompasses decentralized identity verification, exploring mechanisms like decentralized identifiers (DIDs) and verifiable credentials. Smart contract integration is detailed, emphasizing adaptability to diverse organizational structures. The exploration extends to immutable record-keeping, cross-organization data sharing, and integration with existing HRsystems, addressing challenges related to data migration, system compatibility, and user adoption. In summary, this paper aspires to redefine conventional HR processes through a comprehensive exploration of decentralized identity systems in employee onboarding. The approach holds the promise of creating a resilient, trustworthy, and technologically advanced HR ecosystem tailored to the digital era at Hire Lab Consultant Pvt. Ltd.

ICATEM24
AI018

AI PREDICTION TOOL TO IDENTIFY THE DEMAND AND SUPPLY OF THE PRODUCT

[1]Arpith Mishra
[1]Student, Dept. of Commerce, SRM Institute of Science and Technology, Ramapuram

ABSTRACT

In the realm of business and commerce, the delicate balance between supply and demand is a crucial determinant of success. Predicting these trends accurately can provide companies with a competitive edge, ensuring efficient production, optimal inventory levels, and timely market responsiveness. In recent years, Artificial Intelligence (AI) has emerged as a transformative force in this domain, offering sophisticated tools to forecast and identify patterns in supply and demand dynamics. By harnessing vast amounts of historical data, these AI systems employ advanced algorithms such as machine learning and neural networks to recognize trends, correlations, and anomalies. By analyzing consumer behavior, preferences, and external variables, these tools can predict future demand with remarkable accuracy. This empowers businesses to optimize production schedules, manage inventory efficiently, and strategize marketing campaigns tailored to anticipated demand. On the supply side, AI tools aid in optimizing the entire supply chain. Real-time data analysis enables agile responses to changes in demand, ensuring a responsive and adaptive supply chain. In conclusion, the advent of AI prediction tools has revolutionized the way businesses approach the understanding and management of product demand and supply. By harnessing the power of data analytics and machine learning, companies can navigate the complexities of the market landscape with informed decisions, efficiency, and competitiveness. This paragraph aims to provide a glimpse into this transformative technology, highlighting its methodologies, applications, and profound implications for the future of commerce and industry.

ICATEM24
AI019

THE IMPACT OF AI IN PRODUCT DESIGN AND PRODUCT VISUALIZATION

[1]Arun Balaji

[1]Student, Dept. of Commerce, SRM Institute of Science and Technology, Ramapuram

ABSTRACT

In the fast-evolving landscape of product design and visualization, Artificial Intelligence (AI) has emerged as a pivotal force, revolutionizing traditional methods and opening new frontiers of creativity and efficiency. This abstract explores the profound impact of AI in shaping the process of product design and visualization across various industries. AI-driven design tools are enabling designers to streamline their workflows, enhance creativity, and accelerate the product development cycle. By leveraging AI algorithms, designers can generate innovative concepts, optimize designs based on user feedback, and predict market trends with greater precision. Moreover, AI-powered product visualization tools are reshaping the customer experience, allowing for immersive and interactive representations of products. This abstract delves into the applications of AI in product customization, where algorithms analyze consumer preferences to create tailored designs, enhancing customer satisfaction and brand loyalty. Additionally, It's role in automating tedious design tasks, such as layout optimization and material selection, is highlighted, freeing up designers to focus on innovation and strategic decision-making. Through case studies and examples, this abstract showcases the tangible benefits of AI in product design, from reducing time-to-market and production costs to improving design accuracy and product quality. As AI continues to evolve, its integration into the realm of product design and visualization promises to reshape industries, empower designers, and elevate the overall customer experience. This abstract aims to provide insights into the transformative potential of AI, illustrating its role as a catalyst for innovation and efficiency in the dynamic world of product design and visualization.

ICATEM24
AI020

THE IMPACT OF AI-POWERED PERSONALIZED SHOPPING ASSISTANTS FOR SMALL E-COMMERCE BUSINESSES

[1]Abishek M

[1]Student, Dept. of Commerce, SRM Institute of Science and Technology, Ramapuram

ABSTRACT

The rise of e-commerce has revolutionized the way businesses operate, particularly for small-scale enterprises seeking to compete in the digital marketplace. By leveraging AI technologies such as machine learning and natural language processing, personalized shopping assistants can analyze vast amounts of customer data to provide tailored recommendations, product suggestions, and assistance throughout the shopping journey. Through a comprehensive review of existing literature and case studies, this paper examines the various ways in which AI-powered personalized shopping assistants benefit small e-commerce Businesses. These benefits include increased customer engagement, higher conversion rates, improved customer satisfaction, and enhanced brand loyalty. Additionally, the paper discusses challenges and considerations such as data privacy concerns, algorithmic bias, and the need for continuous optimization and training of AI models. Furthermore, the paper explores practical implementation strategies for small e-commerce businesses looking to integrate AI-powered personalized shopping assistants into their operations. This includes considerations for selecting suitable AI platforms, data management practices, and strategies for integrating AI seamlessly into existing e-commerce platforms. Overall, the findings suggest that AI-powered personalized shopping assistants offer significant opportunities for small e-commerce businesses to differentiate themselves in a crowded marketplace, enhance customer experiences, and drive sustainable growth. However, successful implementation requires careful planning, ongoing monitoring, and a commitment to addressing ethical and technical challenges associated with AI integration in e-commerce.

ICATEM24
PH021

LUMINESCENCE STUDIES ON SAMARIUM DOPED BARIUM BORATE GLASSES

[1]M. Priya
[1] Department of Physics, Saveetha Engineering College, Chennai

ABSTRACT

Sm^{3+} doped barium borate glass ($60B_2O_3$ + $39.7BaCO_3$ + $0.3Sm_2O_3$) was synthesized by conventional melt-quenching technique and characterized by various spectroscopic techniques. UV-absorption data were used to calculate the optical absorption addition with Urbah energy (E_u) of the prepared glasses, and Tauc's plot was also used to determine the direct and indirect optical band gap energies of the glasses. The fluorescence properties were studied through photoluminescence (PL) excitation, PL emission, and PL decay measurements. In this work, excitation dependent photoemission properties for the prepared glasses were studied, the PLE spectra shows the radiative transitions of Sm^{3+} barium borate (SBB) glass the radiative transitions of Sm^{3+} ions from $^4G_{5/2}$ to $^6H_{5/2}$, $^6H_{7/2}$, and $^6H_{9/2}$ attribute in the emissions at 566, 602, and 649 nm. The non-exponential nature of decay studies is fitted with the Inokuti-Hirayama model for S=6, 8 and 10 which indicated the dipole-dipole, dipole-quadrupole, and quadrupole-quadrupole mechanisms respectively, and the energy transfer parameter (Q), critical transfer distance(R_c), donor-acceptor interaction parameter (C_{DA}) values are calculated and tabulated. From the PL spectra, colorimetric parameters such as chromaticity coordinates, color purity, and correlated color temperature (CCT) were evaluated shows the glass could be used for various optoelectronic applications. The TL kinetic parameters of glass were studied by the peak shape method.

ICATEM24
AI022

IMPACT OF AI IN SALE OF GOODS

[1] Lingeshwaran. K

[1]Student, Dept. of Commerce, SRM Institute of Science and Technology, Ramapuram

ABSTRACT

The impact of AI on the sale of goods is substantial, revolutionizing various aspects of the sales process. From personalized recommendations and predictive analytics to efficient inventory management, AI enhances customer experiences, streamlines operations, and ultimately drives sales growth. This abstract explores the transformative influence of AI technologies in the sale of goods, emphasizing their role in optimizing marketing strategies, improving customer engagement, and fostering a data-driven approach for businesses to stay competitive in the evolving market landscape.

ICATEM24
BC023

MEDICAL CYBER-PHYSICAL SYSTEM USING BLOCKCHAIN TECHNOLOGY

[1] Suresh Kumar K, [2] Suganthi N
[1] Professor, Department of Information Technology, Saveetha Engineering College, Chennai
[2] Assistant Professor, Department of Computer Science and Engineering, SRM Institute of Technology, Ramapuram Campus, Chennai, Tamilnadu, India

ABSTRACT

Flexible interactions between patients and medical systems, especially through Medical Cyber-Physical System (MCPS), allow for three-dimensional medical services to be given. As determined by MCPS, a safe and reliable identity mechanism is required to construct the security barrier. The authentication scheme of MCPS is built around the blockchain features, making it suitable for computers, users, and gateways can be handled, lightweight. Furthermore, it has been shown that the scheme we have developed can withstand the current attacks, which means our proposed scheme is viable for deployment in the medical industry.

ICATEM24
TL024

FACTORS INFLUENCING FACULTY ENGAGEMENT IN TECHNOLOGY AND MANAGEMENT INSTITUTIONS IN CHENNAI

[1]Murugan.K, [2]Sathish Kumar. J
[1]Assistant Professor (Selection Grade), Faculty of Science and Humanities,
SRM Institute of Science and Technology, Ramapuram Campus.
[2]Assistant Professor (Senior Grade), Department of
Commerce, Faculty of Science and Humanities, SRM Institute of Science and Technology,
Ramapuram Campus.

ABSTRACT

Faculty engagement is influenced by a multitude of interconnected factors. An institution's culture, characterized by inclusivity and support, significantly impacts how engaged faculty members feel. Effective leadership styles that value faculty input and promote collaboration play a pivotal role. Faculty involvement in decision-making through shared governance cultivates a sense of ownership and commitment. Clarity in roles and expectations prevents frustration and disengagement. Providing avenues for continuous professional development and growth creates motivation among faculty. Striking a balance between work and personal life prevents burnout, reinforcing engagement. Recognition and rewards, both tangible and intangible, acknowledge faculty contributions. A collegial environment, where colleagues offer support and collaboration, enhances engagement. Adequate resources and facilities enable faculty to excel in teaching and research. Transparent communication channels and constructive feedback build a positive relationship between faculty and administration. Job security through tenure or long-term contracts fosters a sense of stability and investment. Seeing the positive impact on student success further motivates faculty commitment. When faculty members resonate with the institution's mission and values, they are more likely to engage deeply. Challenging and intellectually stimulating work maintains their interest. Support for both teaching and research demonstrates institutional investment. Flexibility in work arrangements acknowledges individual needs and supports engagement. Involvement in community initiatives and external activities extends faculty's sense of purpose. Granting decision-making autonomy empowers faculty, reinforcing their dedication. In sum, faculty engagement thrives when these intertwined factors converge to create an environment that values, supports, and recognizes their contributions. An engaged faculty in technology and management institutes will show a high level of commitment and involvement in their profession. For them teaching is more of commitment than compliance. Very particular needs to be evaluated is that the factors influence the behaviour of faculty members which drives them to ensure high commitment and involvement. This paper drives into deeper into analysis of various factors engages the faculties of technology and management institutions in such a way that improves the performance of faculty therefore it also reflects upon students' overall development.

ICATEM24
VL025

OBSTACLE AVOIDANCE: LEVERAGING TRANSFER LEARNING AND FPGA FOR ACCELERATION

[1] Jeyalakshmi. V, [2] Arjun Chakkrapani, [3] Preethaa Jansirani, [4] Kripa. S, [5] Vaithiyanathan. D
[1,2,3,4] Department of Electronics and Communication Engineering, College of Engineering, Guindy, Chennai, 600025, Tamil Nadu, India.
[5]Department of Electronics and Communication Engineering, NIT Delhi, India

ABSTRACT

Obstacle detection and avoidance have historically been manual processes. With the advent of neural networks, many processing tasks have been made autonomous with more efficient by obtaining a wide variety of data from their surroundings to perform the next move. Training these networks is computationally intensive, which became the driving force behind transfer learning. Field Programmable Gate Arrays (FPGAs) which revolutionized reconfigurable logic is the next choice considered the opportunity to interleave the processing tasks between a general-purpose processor and dedicated logic blocks. Extending this concept to collision detection and using hardware acceleration to speed up the decision process can be highly beneficial, especially in such time critical applications. In this article, the idea above has been reviewed, and a method to implement the system has been proposed.

ICATEM24
NW026

A NOVEL HYBRID CLUSTERING ALGORITHM FOR ENERGY-EFFICIENT DATA AGGREGATION IN WIRELESS SENSOR NETWORKS

[1]Yuvaraj.P
[1]Assistant Professor, (SG) Department of EIE, Saveetha Engineering College, Chennai, India

ABSTRACT

Wireless sensor networks (WSNs) are gaining popularity in a wide range of applications such as environment monitoring, healthcare, and industrial automation. However, the energy consumption of the sensor nodes is a critical issue, which impacts the network lifetime. Clustering is an effective approach to reduce energy consumption and prolong the network lifetime. In this paper, we propose a novel hybrid clustering algorithm, named NHCA, which combines the benefits of k-means and particle swarm optimization (PSO) algorithms to achieve better energy efficiency, network lifetime, and scalability. The proposed algorithm considers the residual energy, distance, and connectivity of the nodes to select the cluster heads and perform data aggregation. The simulation results demonstrate the effectiveness of the proposed algorithm in terms of network lifetime, energy consumption, and scalability compared to other clustering algorithms.

ICATEM24
ME027

PERFORMANCE ENHANCEMENT OF SPHERICAL PRESSURE VESSEL THROUGH AUTOFRETTAGE PROCESS

[1] Keerthik Raju J, [2] Davidson Jebaseelan, [3]Jayaprakash J
[1]Student, Vellore Institute Technology,Department of Mechanical Engineering, Chennai
[2]Professor, Vellore Institute Technology,Department of Mechanical Engineering, Chennai
[3]Professor, Dr.MGR Educational and Research Institute, Chennai.

ABSTRACT

In recent years, the autofrettage process has been proven as a pivotal process for the performance enhancement of various high-pressure containers. Because the elasto-plastic deformation of the inner layer has increased strain hardening, which causes more product life and avoids uncertain failures. We reviewed nearly 40 papers of various pressure vessel applications such as, common rail cylinder, hydrogen storage cylinder, space and defence vehicle parts. This paper focused on validating numerical studies of autorettage pressure, burst pressure, optimal elasto-plastic layer thickness, and compressive residual stresses using ANSYS with analytical equations. In this case study, we have taken three different materials, such as ASTM A723/A723M, HB7 and Ti-6Al-4V and examined analytical and numerical solutions such as compressive residual stresses, influenced by the Bauschinger effect, increases the burst pressure of the autofrettaged pressure vessel.

ICATEM24
BME028

EFFECT OF STRESS IN MICRONEEDLE INSERTION INTO SOFT TISSUE OF HUMAN SKIN

[1] Raja Rajeswari N, [2]Praveen Kumar S
[1,2]Professor, Saveetha Engineering College, Chennai, India.

ABSTRACT

The insertion pain of needle during delivery of drugs into human body is minimized by using the microneedles. This paper focuses on the effect of stress during the insertion of microneedle into the soft tissue of human skin. The numerical analysis of the microneedle insertion into the transdermal region of skin is performed to determine the safety of insertion during drug delivery. By analyzing the effect of stress created during the insertion process, the failure of the microneedle can be prevented. In FEA model, the individual characteristics of soft tissue and microneedle are created and then interfaced to the effect of interfacial contact stress. Also, the microneedle deflection is observed to determine the Factor of Safety for a successful insertion of the microneedle into the soft tissue during drug delivery. Thus, an effective drug delivery is achieved by designing the microneedle optimally with the consideration of the effect of stress.

ICATEM24
AI029

MULTILINGUAL VIDEO LOCALIZATION SOFTWARE FOR DUBBING USING AI

[1] Meenadshi M, [2] Sujatha E, [3] Raja Rajeswari N
[1] UG Student, Department of Computer Science and Engineering, Saveetha Engineering College, Chennai, India
[2] Professor, Department of Computer Science and Engineering, Saveetha Engineering College, Chennai, India
[3] Professor, Department of Mechanical Engineering, Saveetha Engineering College, Chennai, India

ABSTRACT

In today's interconnected global media landscape, the demand for localized video content knows no boundaries. Dubbing, a conventional method of adapting videos for diverse audiences, has long been a time-consuming and labor-intensive process. This paper introduces a groundbreaking solution, the Multilingual Video Localization Software (MVLS), which leverages cutting-edge Artificial Intelligence (AI) technologies integrated into Python-based workflows. MVLS fully automates the dubbing process, offering an efficient, cost-effective, and widely accessible solution for multimedia industries. MVLS seamlessly integrates state-of-the-art speech recognition, machine translation, and voice synthesis algorithms into Python. It employs the Deepgram API for precise spoken dialogue transcription, harnesses Google Translate for text translation, and utilizes Python libraries like moviepy and gtts for natural-sounding dubbing. The system adapts to diverse video genres, ensuring that lip synchronization, tone, and emotional context are preserved. Key features of MVLS include its effortless integration into existing Python-based post-production workflows, support for a myriad of languages, and a user-friendly interface. This empowers content creators and studios with a powerful tool for efficiently producing localized content. This paper details the technical architecture, training data, and evaluation metrics used in developing MVLS, showcasing its remarkable performance across various dubbing scenarios and languages. MVLS, integrated with Python, not only revolutionizes video localization but also facilitates the rapid production of multilingual content, extending the reach of video materials to global audiences. This integration of AI-driven technologies within Python environments paves the way for a more connected and culturally inclusive media landscape.

ICATEM24
AI030

EXPLORING THE CONNECTION BETWEEN ARTIFICIAL INTELLIGENCE AND EMPLOYABILITY SKILLS

[1] Sneha Priya. P, [2] Sundar C
[1] Research Scholar, SRMIST, Ramapuram. Assistant Professor, Saveetha Engineering College, Thandalam.
[2] Dean and Professor, Management Studies, SRMIST Ramapuram

ABSTRACT

In an era characterized by rapid technological advancement and automation, developments in Artificial intelligence (AI) have led to the creation of new professions while also requiring additional skills for existing ones. Higher education institutions (HEIs) confront the challenge of staying aligned with technological progress. This involves not only preparing students for their future careers but also safeguarding graduates from potential disruptions in the job market due to AI. Understanding the dynamic relationship between AI and employability is crucial as it facilitates the successful transition of graduates into the professional sphere. Despite the significance of this connection, there has been limited study on how students use AI and learn skills needed for jobs nowadays. This study aimed to address this gap by employing a combination of methods, including an online questionnaire with both close-ended and open-ended questions, to collect data from engineering graduates. Various descriptive statistics techniques were used to analyze the collected data. The findings indicate that students rely on a variety of AI platforms such as ChatGPT and tome.ai for tasks such as content preparation and presentation and so on. Furthermore, the study reveals a significant relationship between the use of AI software, the challenges and benefits associated with AI, and the acquisition of employability skills. Based on these results, recommendations are provided for the implementation of AI in higher education policy and practice.

ICATEM24
ME031

EFFECT OF TEACHING FOREIGN LANGUAGES IN ENGINEERING COLLEGES

[1] Manimaran. G
[1] Professor, Mechanical Engineering, Saveetha Engineering college

ABSTRACT

The foreign languages were introduced in technical colleges in last decade in a slow manner in selective colleges and more colleges were offering at present. The present work compiles the effect using the statistical data's of learner's views after the introduction of foreign languages like Japanese, German, French, and Chinese at Saveetha engineering college. The sample of 30 students from all four languages were taken for sample and classes were recorded for study. Study was conducted to analyse the learners on following criteria and it was reported by the teachers that many of the components were shown in the attitude of the learners and especially in the Japanese classes sharp minds are outcomes and their skill level also enhanced in a better way.

ICATEM24
DL032

QOS AWARE RADIO RESOURCE ALLOCATION ALGORITHM FOR HTC AND MTC USERS IN LTE-A ENVIRONMENT

[1]Jeffin Gracewell, [2]Linda Rose, [3]Nisha, [4]Leeban Moses, [5] T. Perarasi
[1]Associate Professor, Department of ECE, Saveetha Engineering College, Chennai
[2] Assistant Professor, Department of Digital Sciences, Karunya Institute of Technology and Sciences, Coimbatore, Tamilnadu, India
[3]Assistant Professor, Department of Computer Applications, Faculty of Science and Humanities, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, India
[4,5] Assistant Professor, Department of ECE, Bannari Amman Institute of Technology, Erode, Tamilnadu, India

ABSTRACT

Wireless communication with large number of devices connected from many sensors will require a network in order to satisfy their quality of service. One such network for Machine-to-Machine (MTC) is standardized during long term evolution advanced (LTE-A). During environmental analysis of information for IoT applications, need of an infrastructure arises that is provided by MTC. It has been validated from many researchers that LTE were developed for high data rate devices. As LTE –A derived from its origin LTE, it cannot be directly operated for low rate applications. Allocating the resource to user is a challenging task in LTE-A network, since there is many traffic involved from a single user. The traffic in this network also gets increased due to Machine type communication devices, and this again becomes a challenging task for allocating the users to network in both uplink and downlink communication. This paper provides solution by maximizing energy efficient data packets during uplink in LTE-A.

ICATEM24
TL033

E-LEARNING ECOSYSTEM: INNOVATIONS IN LANGUAGE TEACHING AND LEARNING PROCESS

[1] Hemalatha V
[1] Assistant Professor (SG), Institute of Science & Technology, NMV University, Poonamallee, Chennai.

ABSTRACT

The aim of this article is to find the effectiveness of E-learning Ecosystem in the process of language teaching and learning through a case study. The focus of the research is to observe and analyze the involvement of learners in the smart classroom using the latest online tools and latest technologies. The process of Language teaching and learning has been changing after the venture of technology into the field of education for more than two decades. With the advent of technological advancements, innovation has become mandatory in the teaching field. Traditionally, language teaching was confined within the tools of paper and pen but for the current generation (Gen Z), the list of tools has expanded to encompass mobile phones, laptops, tablets and personal computers. This changing scenario has made the language teachers to change their role into the language facilitators. This shift has become unavoidable, as the teachers and learners mainly rely on the latest technologies. This study is done during the academic year 2022-23. The analysis has its basis on the learners' formative assessment in testing their language skills (LSRW) through online tools and platforms that are available for educational purposes.

ICATEM24
IP034

AUTOMATED DETECTION AND CLASSIFICATION OF MOTORCYCLE NUMBER PLATE FORMATS TO IMPROVE ROAD SAFETY

[1]Balamurugan Balusamy
[1]Professor, Shiv Nadar University, Uttar Pradesh

ABSTRACT

Number Plates are necessary for every vehicle. The format of the Number Plate is defined by the governments. Nowadays, the number plate consists of religion and caste based images. It also consists of regional languages, slogans and so on. If the students in colleges have these non-standard formats, they stimulate hostility among students. Hence, identifying the non-standard number plate format is necessary for traffic police and college management. The objective of this research is to identify the non-standard number plates in two-wheelers. Hence, in this paper, Number Plate Format Recognition (NPFR) is proposed for two-wheelers. The format of the number plates is matched and the unformatted ones are identified. A dataset is created for this work from real-time CCTV images. Various experiments are carried out to analyse the proposed method. It is observed that high values of above 97% are achieved for various performance metrics.

ICATEM24
CHEM35

OPTIMAL DESIGN TECHNIQUE THROUGH QUASI STUDY PERFORMANCE ON MEDIUM TEMPERATURE, NON-TRACKING EXTERNAL COMPOUND PARABOLIC CONCENTRATOR (XCPC) INTEGRATED WITH STRATIFIED THERMAL STORAGE TANK FOR SOLAR REFRIGERATION SYSTEM USING TRNSYS

[1]Christopher. S, [2]Mettilda
[1]Assistant Professor, Department of Manufacturing Engineering, Saveetha School of Engineering, Chennai
[2]Associate Professor, Department of Chemistry, Saveetha Engineering College, Chennai, India.

ABSTRACT

An active solar water heating system using an External Compound Parabolic (XCPC) solar collector integrated with stratified thermal storage tank is modeled for solar refrigeration based on Madras weather conditions. The entire parts of the design parameters are measured and the optimum value is obtained using TRNSYS. Design parameters of a both the XCPC solar collector and the storage tank are optimized by varying collector area, a mass flow rate of the solar field heat transfer fluid (HFT), storage tank volume, tank height. Based on the above-optimized system parameters, a thermodynamic study was conducted to study the thermal behavior of both solar collector and thermal storage tank. From the results, it is indicated that optimized system can meet 80 % of hot water requirement for the application annually with annual collector energy efficiency and storage tank exergy efficiency of 58 % and 64 % for discharging period of 6 hours per day. Further to analyze the thermal performance of the refrigeration system, the optimized SWH is connected with one tons solar refrigeration system; it is also found that annually 12.26 MJ/hr of cooling energy is produced through solar powered refrigeration system with COP of 0.59.

ICATEM24
CS036

DYNAMIC USAGE OF CRYPTO TRANSACTIONS IN A USER-FRIENDLY WAY

[1]Madhura Meenatchi. A, [2]Thilakesh Raj. A, [3] Nagappan.G, [4] Nalinipriya.G

[1]UGScholar, Department of CSE Chennai Institute of Technology, Chennai, Tamilnadu, India
[2]PG Scholar., University of Technology Sydney, Department of IT, Sydney, Australia
[3]Professor, Department of CSE, Saveetha Engineering College, Chennai, India
[4]Professor, Department of IT, Saveetha Engineering College, Chennai, India

ABSTRACT

Self-discipline and professional ethics of cryptocurrency exchange platforms, as well as relevan ce between them and to cryptocurrency wallets are covered in this standard. Exchange business logic, operational procedures, user authentication programs are also covered in this standard. In addition, a small but necessary technical category of requirements, including terminologies, basic architectural framework, key indicators, end-user interface specifications, in order to achieve the previously mentioned goals is covered in this standard. A framework of a custodian service for cryptocurrency and token assets is defined in this standard. Custodian reference technical architecture, business logic description, custodian service business models, digital asset evaluation criteria, operational procedure models, and regulatory requirement support models are included in this framework. Defined in this standard is the general process of cryptocurrency payment between consumers and merchants. This process describes how a consumer purchases goods or services with cryptocurrency and how the merchant receives fiat money in return. It involves multiple aspects such as cryptocurrency payment operators playing an agent role, consumers owning cryptocurrency, merchant accessing to a cryptocurrency payment platform, banks, and cryptocurrency exchanges.

ICATEM24
ES037

A WEB TECHNOLOGY APPROACH TO COMBAT GST FRAUD IN RESTAURANTS

[1]Rajipandurangan, [2]Manapaka Karthik, [3] Mannepalli Karthik
[1,2,3] Department of Electronics and Communication Engineering, Saveetha Engineering College, Chennai, India

ABSTRACT

The possibility for customer exploitation through fraudulent Goods and Services Tax (GST) tactics. Unscrupulous businesses frequently participate in actions such as collecting GST without proper invoicing, having inactive GST numbers, or applying GST erroneously when not necessary. Many customers unintentionally fall prey to such methods. Motivated by the regular incidence of customers leaving restaurants without seeing their bills, this approach empowers consumers and promotes openness in the sector. Its goal is to inform customers about the authenticity of GST charges levied by eateries, giving a proactive tool for combating fraudulent activities. By tackling the varied nature of GST- related frauds, the Restaurant's GST Scam Scanner helps to provide a more accountable and trustworthy eating experience for customers.

ICATEM24
ES038

AUTONOMOUS RAILWAY INSPECTION VEHICLE WITH ENHANCED TRACK SAFETY IN AUTOMATED CRACK DETECTION

[1]Vanitha.M, [2]Vishal.S, [3] Pandidharan. G.R, [4] Monashri.G, [5] Lokesha·B
[1]Professor, Department of Electronics and Communication Engineering, Saveetha Engineering College, Chennai, India
[2,4,5] UG Student, Department of Electronics and Communication Engineering, Saveetha Engineering College, Chennai, India
[3] UG Student, Department of Computer Science and Engineering, Saveetha Engineering College, Chennai, India

ABSTRACT

Indian Railways operates one of the world's largest rail networks, stretching over 115,000 km across India. Despite its vast size, the network struggles with reliability and safety standards. The main issue in rail track cracks, often missed due to the lack of timely detection and maintenance, posing serious safety risks. Traditional manual inspection methods are slow, require many human skilled workers, and are not always effective. This paper aims to tackle this problem by developing an automated system for detecting rail track cracks. The proposed design uses an Ultrasonic sensor and the computer vision algorithms are used to identify cracks accurately and quickly, reducing the risk of train accidents. This system also includes GSM modules to alert authorities via SMS, enhancing the response time to potential hazards. Unlike current methods that use expensive and less accurate LVDTs (Linear Variable Differential Transformers) for measuring track distance and cracks, the proposed design offers higher accuracy. This design is significant for its ability to operate both day and night, offering advantages such as lower costs, reduced power consumption, and quicker analysis.

ICATEM24
ML039

CARDIO VASCULAR DISEASE PREDICTION USING MACHINE LEARNING

[1]Vikram Anand.V, [2]Anitha.R, [3]Khanaghavalle. G.R

[1]U.G Student, Department of Artificial Intelligence and Data Science, Sri Venkateswara College of Engineering, Chennai, India
[2]Professor, Department of Computer Science and Engineering, Sri Venkateswara College of Engineering, Chennai, India
[3]Assistant Professor, Department of Computer Science and Engineering, Sri Venkateswara College of Engineering, Chennai, India

ABSTRACT

Cardiovascular disease is one of the main causes of death in the modern world. Clinical knowledge analysis has a crucial component that was previously predictively concerning. It is now clear that predictions and insights can be obtained from the enormous amounts of data produced in the healthcare industry by integrating machine learning (ML) techniques. Recent developments in a variety of Internet of Things (IoT) fields have shown encouraging potential in embracing ML's capabilities. It's interesting, though, that not much research has been done on using ML to forecast cardiovascular illnesses. In this paper, we suggest a novel way to improve predictive model accuracy by using machine learning techniques to pinpoint important features. We combine well-established classification techniques with feature fusion techniques in our predictive model. To be more precise, we combine a linear model and the Random Forest algorithm to produce a reliable prediction model for cardiovascular disorders. We have improved performance metrics with an 88.7% sensitivity rate using this approach.
Our objective is to enhance the capabilities of predictive healthcare analytics by developing more dependable and effective diagnostic tools for cardiovascular diseases through the utilization of a variety of techniques within the ML framework. Such methods could revolutionize disease prognosis and management with more research and development, improving patient outcomes and healthcare delivery in the process.

ICATEM24
MS040

UNVEILING THE POTENTIAL OF IOT WEARABLE SENSORS WITH TWO-DIMENSIONAL MATERIALS

[1]Baraneedharan.P, [2] Somasundaram.K

[1]Centre for Excellence in Photonics and Nanotechnology Research, Department of Electronics and Communication Engineering, Saveetha Engineering College, Chennai, India
[2]Department of Computer Science and Engineering, Alpha College of Engineering, Chennai, India

ABSTRACT

The advent of two-dimensional (2D) materials has ushered in a new era of innovation in the field of wearable technology, particularly in the realm of Internet of Things (IoT) sensors. This paper presents a novel approach to designing and implementing an IoT wearable sensor utilizing 2D materials. Leveraging the exceptional properties of 2D materials our sensor offers unparalleled sensitivity, flexibility, and efficiency. The proposed sensor is integrated seamlessly into wearable devices, allowing for real-time monitoring of various physiological and environmental parameters. Through advanced fabrication techniques, including chemical vapor deposition (CVD) and transfer printing, we demonstrate the feasibility of large-scale production while maintaining high performance standards.. Experimental results showcase the sensor's exceptional performance in detecting biometric signals, environmental pollutants, and physical activity metrics with high accuracy and reliability. Additionally, its robustness against mechanical stress and environmental factors underscores its potential for long-term, real-world applications. Overall, our IoT wearable sensor based on 2D materials represents a significant advancement in wearable technology, promising transformative impacts in healthcare, environmental monitoring, and beyond.

ICATEM24
AI041

EXACTING FACILITATING TECHNIQUES TO COMPETE WITH THE ADVANCEMENT OF AI: IN LEARNING A FOREIGN LANGUAGE

[1]Evangelin Helen. R

[1]Dept. of Training, Saveetha Engineering College, Chennai, India

ABSTRACT

Advancement in Artificial intelligence is expeditious, that has the potential to seize control of entire human's life aspects. AI's contribution to the world is pre-owned in every industry and its impact on the education sector is predominant and detrimental. At this time, where every single source is available effortlessly through AI, it is intelligibly setting demands for facilitators to devise methodologies to be in league with AI. AI's ability to replace humans by accumulating huge data and being persistent in updates, displays its accuracy. Learners believe in its expertise, which may lead them towards ch oosing AI tools to educate themselves, over opting for a facilitator. This paper, notably focuses on tutoring a foreign language, in which AI comes up with multiple apps and websites. Conversely, native speakers and tutors who are actual experts in teaching either lose their opportunities or have to battle it out with this progressive technology. To play a substantial match with AI, facilitators have to be upgraded in order to incubate several innovative methodologies to make their sessions more engaging, active and constructive. With the purpose of improvising teaching techniques, it is essential to understand the failures of AI as it lacks accuracy, interaction and other phenomenal aspects of learning a new language. Readiness in knowing the expectations of the learners, acquiring the required skills and applying exciting methods to grab the attention of the learners would lend a hand to lift up the in-person educational system.

ICATEM24
VR042

EFFECT OF VIRTUAL REALITY MARKETING STRATEGY ON TOURISM

[1]Janis Bibiyana.D, [2]Maneeshwar. CSR, [3]D. Kuldeep.D

[1]Associate Professor of Commerce, FSH, SRM-IST, Ramapuram

[2,3] B. Com -Hons (PA), Department of Commerce, FSH, SRM-IST, Ramapuram

ABSTRACT

In the age of information explosion, consumers are better informed than ever before about various products and services. It is becoming more difficult for any marketer to meet the needs of these "sophisticated" consumers, which is their top priority in the face of fierce competition. Virtual reality (VR) leverages its novelty and experience and is one of the latest technologies that has been proven effective in attracting and engaging consumers, especially in the travel industry. A complete understanding of VR technology and its strengths and weaknesses will help marketers better evaluate the technology tool to determine the return on investment of a VR marketing investment. In addition, a conceptual framework linking VR Marketing Stimulate VR Experience Dimensions and VR Marketing Outcomes is presented, followed by a discussion of the theoretical and practical aspects of VR marketing. Three successful cases are specifically covered, showing its importance and growing popularity in the tourism industry. Based on the latest development of VR, finally, look at the application possibilities of VR in the industry.

LOAD DISPATCH OPTIMIZATION ALGORITHM UTILIZING BACKPROPAGATION BASED ON LEVENBERG-MARQUARDT WITH ARTIFICIAL BEE COLONY OPTIMIZATION

[1]Arun Pradeep, [2]Sreeja KA
[1]Department of Electronics and Communication Engineering, Saveetha Engineering College, Chennai, Tamil Nadu
[2]Department of Electronics and Communication Engineering, SCMS School of Engineering and Technology, Ernakulam, Kerala,

ABSTRACT

The objective of this research is to improve the optimization of load dispatch issues for effective energy administration by identifying the most optimal values. Artificial Neural Network (ANN) classifier training is essentially an optimization task, where the ANN is trained to identify the most suitable weight sets for the network. ANNs are widely utilized in the fields of energy management and load forecasting. However, conventional algorithms like backpropagation often suffer from slow convergence and the risk of getting stuck in local minima during complex computations. To address these limitations and enhance system performance, this work combines the strengths of two optimization methods: Levenberg Marquardt Backpropagation (LM- BP) and the meta-heuristic exploration algorithm known as Artificial Bee Colony (ABC). This hybrid Neural Network (NN) algorithm is introduced for load dispatch. Simulation results demonstrate that the performance of this hybrid systemsurpasses that of other optimization algorithms, achieving an impressive accuracy level of 99.23%. The construction of the neural network is carried out utilizing the NN Toolbox in MATLAB, and the implementation of these optimization techniques is illustrated with the assistance of a bus system.

ICATEM24
MATH44

AN OPTIMIZATION TECHNIQUE BASED ON PREDICTIVE ANALYSIS FOR ENHANCED MATTRESS INVENTORY MANAGEMENT

[1]Mary Henrietta.H, [2] Sumathi.M, [3]Kalaiarasi.K
[1]Research Scholar, PG and Research Department of Mathematics, Khadir Mohideen College, (Affiliated to Bharathidasan University), Adirampattinam, Department of Mathematics, Saveetha Engineering College, Chennai
[2]PG and Research Department of Mathematics, Khadir Mohideen College (Affiliated to Bharathidasan University), Adirampattinam 614701.
[3]PG and Research Department of Mathematics, Cauvery College for Women, Chennai, Tamil Nadu-620018.

ABSTRACT

The study in the article uses machine learning approaches, specifically with the usage of the Weka software, to optimize inventory management for Sleep zone mattress, situated in Coimbatore. The mattress industry poses unique challenges for inventory management due to its diverse range of product lines, dynamic customer preferences, and need for timely deliveries. Considering consumer trends are constantly changing, it can be difficult for traditional methods to keep up with them. This can lead to overstocking, stockouts, and increased carrying costs. The research develops prediction models that optimize inventory levels in response to these challenges using Weka, a powerful and flexible machine learning toolThe study analyzes historical sales data, accounting for economic indices, promotions, and seasonality, to train and test the machine learning models. The models' efficacy is confirmed using real data from a leading mattress company. The results demonstrate a significant improvement in forecasting accuracy when compared to traditional methods. By actively aligning their stocking levels with anticipated demand, businesses may minimize excess inventory and minimize the risk of stockouts by integrating Weka-generated insights into their inventory management systems. In summary, this study improves the field of inventory management in by demonstrating the efficacy of machine learning models—specifically, those that make use of the Weka software.

ICATEM24
BME45

CONTINUOUS MONITORING USING CLOUD STORAGE FOR THE DETECTION OF SLEEP APNEA THROUGH VITAL PARAMETERS

[1] Sinthia.P [2] Malathi.M
[1] Professor, Dept. of Biomedical Engineering, Saveetha Engineering College, Chennai, India
[2]Professor, Rajalakshmi Institute of Technology, Chennai, India

ABSTRACT

Sleep apnea, known by various sleep disorders, affects individuals across different medical conditions. With the body undergoing irregular changes during sleep, many individuals face risks while asleep. Thus, the necessity for a sleep tracking method becomes crucial. Traditional sleep monitoring devices often lack real-time capabilities, providing data only post a specific sleep duration. Real-time sleep monitoring proves to be the most effective for diagnosing sleep apnea. Hence, an IoT-enabled system for real-time sleep apnea monitoring was developed. Users can monitor various sleep metrics, and upon detecting anomalies, a mobile application sends notifications. The device can track skin response, heart rate, pulse rate, ECG, and LM35, utilizing multiple sensors. This research holds significance as it utilizes a Bluetooth module to simultaneously evaluate sleep metrics without disrupting the subject, displaying results through a mobile application.

ICATEM24
HRM46

EXPLORING INNOVATIVE TRENDS IN E-HRM: A PERSPECTIVE ON ADVANCEMENTS AND TRANSFORMATIONS

[1]Pranav Harshan D [2]Gokul Saravanan M
[1,2] MBA I Year, Department of Management Studies, Saveetha Engineering College, Chennai

ABSTRACT

This abstract delves into the dynamic landscape of electronic Human Resource Management (e-HRM) from an innovation perspective. As organizations adapt to the digital age, they face evolving challenges and opportunities i n managing human capital effectively. This paper examines emerging trends and transformative technologies reshaping HR processes. From the integration of artificial intelligence and data analytics in recruitment to the implementation of virtual reality in training and development, innovative approaches are revolutionizing how HR functions operate. By exploring these advancements, organizations can gain insights into harnessing technology to optimize employee experiences, enhance organizational agility, and drive sustainable growth in the digital era.

ICATEM24
SOM47

SUSTAINABLE OPERATIONS MANAGEMENT: BALANCING EFFICIENCY AND ENVIRONMENTAL RESPONSIBILITY

[1]Nivetha R

[1]I Year MBA, Department of Management Studies, Saveetha Engineering College, Chennai, India

ABSTRACT

The need to integrate sustainable practice into operational management is addressed at this conference given increasing environmental awareness. Focusing on the dynamic field of sustainable operations management, the agenda encompasses an extensive exploration of eco-friendly manufacturing, waste reduction, and Circular Economy principles. Discussions include green supply chains, the adoption of renewable energy sources, and the strategic use of sustainable materials. Successful sustainability implementation is highlighted in real-world case Studies, which provide tangible evidence of challenges and successes. Sustainability of the supply chain, life cycle assessments, and strategies to align organizational objectives with environmental management are key challenges. The conference supports a paradigm shift in how sustainable operations are understood and enables participants to make an impact on environmental protection and efficiency.

ICATEM24
FSC48

INFLUENCE OF FINANCE ON SUPPLY CHAIN FLOW IN AGRICULTURE INDUSTRY

[1] Murugan.K, [2]Akash.A, [3]Santhosh Kumar C

[1]Assistant Professor (Selection Grade), Faculty of Science and Humanities, SRM Institute of Science and Technology, Ramapuram

[2,3] MBA, Department of Management Studies, Saveetha Engineering College, Chennai

ABSTRACT

The influence of finance on the supply chain flow in the agriculture industry is a diverse and critical aspect of sustaining a resilient and efficient agricultural ecosystem. This paper focuses with the objective of optimizing financial flow in the agriculture logistics and to mitigate the cost and its related risk. The paper explores the diverse ways in which financial dynamics impact the various stages of the agricultural supply chain. Beginning with input financing for farmers, access to affordable credit facilitates the procurement of quality seeds, fertilizers, and equipment, enhancing overall production efficiency. Technological advancements, powered by financial support, usher in precision farming and IoT devices, optimizing processes and strengthening productivity. Working capital, made available through financial channels, enables processors and distributors to manage inventory, transportation, and storage costs, ensuring a seamless flow of goods. In this paper the researcher incorporated a scheduled method to conduct personal interview with set of agriculturists near kuthambakkam village to elicit the details regarding the financial aspects of their cultivation pattern of produce and flow of supply to the market. The researcher provided in detail aspects of advancement in the field of agriculture and its cost optimization factors which the market must pay deeper analysis. The Market access and export financing, facilitated by financial backing, open avenues for agricultural products on both domestic and international fronts. Sustainable practices, incentivized through financial mechanisms, align agricultural processes with consumer demands for eco-friendly and ethically produced goods. Government policies and subsidies further underscore the pivotal role of finance, influencing pricing structures, production decisions, and the overall stability of the agriculture industry. In essence, the symbiotic relationship between finance and the agriculture supply chain is indispensable, fostering resilience, sustainability, and growth in this vital sector.

ICATEM24
TEC49

THE IMPACT OF ADVANCING TECHNOLOGY ON MARKETING RESEARCH IN MANUFACTURING INDUSTRY

[1]Harshavarthini S

[1]MBA I Year, Department of Management Studies, Saveetha Engineering College, Chennai, India

ABSTRACT

This paper examines the profound effects of advancing technology on marketing research within the manufacturing industry. With the rapid evolution of advanced technology, manufacturers are using innovative tools such as Automation, IOT devices, and AI to enhance their market research. These technological advancements enable the manufactures to collect and analyze vast amount of data leading to more accurate market segmentation, real-time insights, and personalized marketing strategies. The advancement of technology has modernized the process of data collection, rendering traditional methods. Digital technology has made it effortless for the companies to collect and analyze large amount of data which allows the company to gain a more detailed understanding of market trends and consumer behavior. Advancing technology has enabled the businesses to create more targeted marketing campaigns by providing access to a wealth of customer data which can be used to understand the consumer preferences. The advancing technology in marketing has improved efficiency, effective communication, and collaboration. These abstract highlights the transformative impacts of advancing technology on marketing research in manufacturing sector.

ICATEM24
SMM50

INFLUENCE OF NEW -AGE TECHNOLOGIES ON SOCIAL MEDIA MARKETING

[1] Yalini C

[1]MBA I Year, Department of Management Studies, Saveetha Engineering College, Chennai

ABSTRACT

In today's digitally-driven era, the landscape of social media marketing is continually evolving, primarily due to the rapid advancement and integration of new-age technologies. This abstract explores the profound influence of emerging technologies, including artificial intelligence (AI), augmented reality (AR), virtual reality (VR), and blockchain, on the strategies and practices of social media marketing.AI, with its capabilities in data analysis, personalization, and automation, has revolutionized how businesses engage with their audience, enabling targeted advertising, predictive analytics, and chatbot interactions. AR and VR technologies offer immersive experiences, allowing brands to create interactive content, enhance product demonstrations, and provide virtual shopping experiences, thereby increasing consumer engagement and brand loyalty. Blockchain technology, with its decentralized and transparent nature, introduces opportunities for secure transactions, authenticating user-generated content, and combating issues like fake news and ad fraud. Furthermore, the abstract delves into the implications of these technologies on consumer behavior, emphasizing the shift towards more personalized and authentic brand interactions. It also discusses the challenges and ethical considerations surrounding the adoption of these technologies, including privacy concerns, algorithmic biases, and the need for regulatory frameworks. Through a synthesis of current research and industry insights, this abstract highlight the transformative role of new-age technologies in reshaping the dynamics of social media marketing, paving the way for innovative strategies and enhanced brand-consumer relationships in the digital age.

ICATEM24
MDD51

MARKET DEMAND DYNAMICS AND THEIR PROPELLING IMPACT ON TECHNOLOGICAL INNOVATION WITHIN THE FOOD INDUSTRY

[1] Santhosh Kumar C, [2] Akash.A
[1, 2]Department of Management Studies, Saveetha Engineering College, Chennai

ABSTRACT

This study reveals how the dynamics of market demand and technological innovation dance in the colourful fabric of Chennai's food business. The sophisticated tastes of customers change along with the culinary scene, resulting in a dynamic interaction that drives innovation. In order to better understand this intriguing link, our research looks at how the ebb and flow of market demands serve as significant catalysts, directing the development of new technologies in the food industry. Chennai is our special laboratory; it's a city known for its varied culinary culture. Through a close examination of the complex aspects of consumer preferences and the corresponding technological answers, our goal is to provide a thorough picture of the innovation trajectory within the local food industry. This study examines the symbiotic link between consumer demands and the innovative solutions that develop to meet them, rather than just exploring trends. The study's findings offer significant value to companies trying to keep up with the constantly shifting expectations of their customers. Businesses can create a mutually profitable and happy connection by deliberately matching their offers with changing wants by keeping an eye on the market. Essentially, the goal of this research is to serve as a lighthouse for companies and entrepreneurs navigating the complex seas of the food industry in Chennai by offering a roadmap for sustainable growth that combines technological innovation with consumer-centricity.

ICATEM24
EH052

EXPANDING HORIZONS: THE PEDAGOGY TOOLS EMPLOYED IN THE DIGITAL ERA FOR AUGMENTING COMMUNICATION SKILLS OF ENGINEERING LEARNERS

[1]V R Jaypreetha M.A
[1]Assistant Professor, Department of Training, Saveetha Engineering College, Chennai, India

ABSTRACT

Over the past few years, the expansion of Artificial Intelligence (AI) has impacted our lives in various aspects. One aspect that has received attention today is language proficiency, including vocabulary enhancement referring to the ability to speak, write, and read. While we understand the advancement in the field of AI and its importance, it is also equally important to understand how communication skills can be augmented in the workspace to upgrade an individual's identity, especially among engineering students. This paper focuses on the digital tools that engineering students can use to improve communication skills. In this domain, AI's advanced and engaging features are the key reasons for learners to opt for AI learning tools. For instance, ChatGPT,Grammarly and Duolingo are utilized for language learning and provide instantaneous feedback that upgrades communication skills to the next level. They correct pronunciation, detect grammatical errors, and suggest improvements. Moreover, the gamified way of learning, and the realistic scenarios generated by VR & AR, makes it interesting for learners to learn AI-based translation platforms and also allow non-native speakers to learn the languages faster by automatically translating text or speech from one language to another. In addition to the technical services provided by AI, accessibility is what makes it easy for learners to use. Unlike the conventional methods, AI enables the learner to learn and leverage his/her communication in their time of leisure. Keeping learners' tight agenda in mind, AI is one of the user-friendly and hassle-free ways to develop effective communication.This research provides compelling evidence for fostering communication skills using pedagogical tools.

ICATEM24
CE053

INTEGRATED ASSESSMENT OF GROUNDWATER QUALITY FOR DRINKING AND IRRIGATION USES IN INDUSTRIAL ZONE

[1]Sundarayamini.K, [2]Balamurugan.P, [3]Vidhyalakshmi Sivakumar
[1,3] Department of Civil Engineering, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai, TN, India.
[2]Department of Community Medicine, Saveetha Institute of Medical and Technical Sciences, Chennai, TN, India.

ABSTRACT

The main objective of the present study is to assess the quality of groundwater for drinking and irrigation purpose in industrial zone in Tiruvallur district. Groundwater is an important source of water for drinking and industrial use in the study area. The study followed the integrated assessment method to identify the contaminants in groundwater. The results divulged that rock water interaction and weathering are the primary process dominant the quality of groundwater. Based on the piper diagram, majority samples were fell in Ca-Mg-Cl and Ca-Mg-HCO_3 type. The estimated water quality index (WQI) suggested that, 76% of the samples are fit for drinking and rest of the sample location requires some degree of treatment before use. The irrigation indices revealed that, all the samples in the study area are fit for agriculture purpose. The study results more help to decision and policy makers to create the awareness among the people for usage of contaminated groundwater in the study area.

ICATEM24
PAR54

THE IMPACT OF ADVANCED TECHNOLOGY SOLUTIONS FOR ENHANCING MANAGEMENT EFFICIENCY AND CUSTOMER SATISFACTION IN E- COMMERCE SECTOR

[1]Preethika V
[1]Department of Management Studies, Saveetha Engineering College, Chennai

ABSTRACT

India's e-commerce landscape has rapidly changed in the last several years due to the introduction of cutting-edge technological solutions meant to improve customer satisfaction and management effectiveness. This research explores the significant effects of these technical developments on e-commerce industry. This study's main goal is to investigate how cutting- edge technological solutions have completely changed how e-commerce companies run, allocate their resources, and engage with their clientele. It also clarifies the important role that technological solutions play in optimizing order processing, inventory management, and shipping operations, which benefits e-commerce companies by increasing their productivity and cost-effectiveness. This research also explore the ways in which these technology advancements have changed the face of the customer experience, making it possible for individualized recommendations, frictionless communications, and improved customer assistance. The overall goal of this paper is to add to the body of knowledge by offering a thorough analysis of how modern technological solutions affect consumer satisfaction and management effectiveness in e-commerce sector.

ICATEM24
PAR55

PREDICTIVE ANALYTICS IN RETAIL: A COMPARATIVE STUDY OF MACHINE LEARNING MODELS FOR DEMAND FORECASTING

[1]Yuvashree R

[1]I Year MBA, Department of Management Studies, Saveetha Engineering College, Chennai

ABSTRACT

This study investigates the application of predictive analytics in the retail industry, specifically focusing on demand forecasting. The research aims to compare the performance of various machine learning models in predicting demand for retail products. The study utilizes historical sales data from a large retail chain and evaluates the accuracy of different models, including linear regression, decision trees, and neural networks. Additionally, the research explores the impact of various factors such as seasonality, promotions, and external events on demand forecasting accuracy. The findings of this study can provide valuable insights for retailers seeking to improve their demand forecasting capabilities through the use of advanced analytics.

ICATEM24
WSN56

OPTIMIZING DISASTER ANALYSIS IN HILL STATIONS WITH ENERGY-EFFICIENT SUBTERRANEAN WIRELESS SENSOR NETWORKS

[1]Vanitha.M, [2]Vishal.S

[1]Professor, Dept. of ECE, Saveetha Engineering College, Chennai, India

[2]UG Student, Dept. of ECE, Saveetha Engineering College, Chennai, India

ABSTRACT

The burgeoning growth of wireless sensor network (WSN) systems offers numerous advantages for data transmission across various environments. Remote monitoring systems play a crucial role in continuous environmental assessment, healthcare, safety, emergency response, and intelligent analysis. Underground wireless sensor networks (UGWSN) have emerged as innovative solutions for detecting various emergency conditions and providing early alerts to people. Despite facing challenges such as installation and maintenance, environmental factors affecting sensor lifespan, and power constraints, UGWSN models are vital for sustainability. This proposed approach focuses on an energy-efficient UGWSN utilizing AI-optimized predictive neural computing (AI-OPNC) models for early detection and analysis of disasters in hilly regions. The primary objective is to detect disaster triggers such as earthquakes and landslide dynamics, and analyze occurrence patterns using AI-OPNC models, while also monitoring network health. The proposed system's performance is evaluated in two phases: network performance in terms of energy efficiency and data loss, and AI-OPNC performance in terms of predictive accuracy. The proposed system achieves 95% accuracy, with a 10% increase in energy efficiency and an 8% reduction in data loss using UGWSN nodes.

ICATEM24
IOT57

AN UNIFIED APPROACH FOR DETECTION OF CHILDREN EMOTION, PHYSIOLOGICALAND SECURITY USING IOT

[1]Archana.T, [2]Arokia Nerling Rasoni.G
[1,2] Assistant Professor, Department of ECE, Saveetha Engineering College, Chennai, India

ABSTRACT

Child security is a major concern worldwide due to various factors such as environmental pollution in school areas and abnormal conditions. Children are vulnerable to physical harassment, making it unsafe for them to be left unattended, whether at a gathering or outside the home. Our project aims to address these issues by providing a portable device equipped with a panic buzzer for use in polluted areas and monitoring children's health. The Children Tracking system is widely used across the world to ensure parents that their children are safe and happy in the school environment without crying. The system tracks the child's movements to and from school, detects their heart rate, and sends an SMS to the parents' phone with the child's location in case of a panic situation, triggered by an altered buzzer.

ICATEM24
IMS58

REDUCED GRAPHENE OXIDE (RGO) BASED ELECTROCHEMICAL IMMUNOSENSOR FOR THE DETECTION OF TSH

[1]Deepa Lakshmi.M, [2]Praveenkumar, [3]Aravind. T
[1]Research Scholar, Department of Electronics and Communication Engineering, Saveetha Engineering College, Chennai, India
[2,3]Professor, Department of Electronics and Communication Engineering, Saveetha Engineering College, Chennai, India

ABSTRACT

A novel approach for the detection of Thyroid Stimulating Hormone (TSH) is described in this paper. Electrochemical immunosensor is based on Glassy Carbon electrode (GCE), which is modified using a reduced graphene oxide(rGO) having an excellent conducting properties. The GO is exfoliated to rGO by solar exfoliation technique, which is a chemical free method. This reduction is verified using electron microscopy characteristics. The rGO is then doped / coated with nanoparticles for enhanced conductivity before covering the base electrode GCE. The modification procedures of electrodes were verified using cyclic and digital pulse voltamettric techniques. An antibody with high affinity to TSH is immobilized onto the electrode surface, which in contact with specific target antigen produces electric signal in response to Ag/Ab immunocomplex reactions. Electrochemical workstation may be used to analyse the characteristics of all working parameters. The concentration of antigen to be detected is observed from the potential readings. Thus the constructed rGO based immunosensor may be stable, selective towards specific target, helps in wide linear range of detection and may be used in Point of Care device applications in future.

ICATEM24
FUZ59

OPTIMIZING NIMONIC-80A MACHINING: A FUZZY DEMATEL APPROACH FOR SUSTAINABLE CRYOGENIC COOLING

[1]Anandan.V, [2]Nareshbabu.M
[1] Department of Mathematics, Saveetha Engineering College, Chennai, India
[2] Department of Mechanical Engineering, Easwari Engineering College, Chennai, India

ABSTRACT

Nickel-based superalloys, demonstrated by Nimonic-80A, are integral materials in various industries. However, the complicated machining process of these alloys, strengthened by intense heat generation, demands innovative solutions. This study examines the refinement of Nimonic-80A machining through novel cooling techniques, such as dry machining, oil Low Quantity Lubrication (oLQL), nanofluid LQL (nLQL), and cryogenic N2LQL (cLQL). Using Taguchi's L-16 orthogonal array, 16 different combinations of experiments are considered based on feed (f) and cutting speed (Vc) levels, examining critical turning parameters like surface roughness (Ra), cutting temperature (T), flank wear (FW), and chip thickness (Tc). Cryogenic nitrogen (LN2) cooling, particularly in the form of cLQL, emerged as an effective cooling agent, exhibiting superior surface topography, reduced temperature, and minimized tool wear and chip thickness. The study proposes the integration of the fuzzy DEMATEL method to further optimize the machining process. This approach aims to investigate and enhance performance based on output parameters, advocating for a sophisticated and sustainable "GREEN PROCESS" for Nimonic-80A alloy machining.

ICATEM24
ANT061

DESIGN OF DRA BASED MASSIVE MIMO ANTENNA FOR MID-BAND 5G APPLICATIONS

[1]K. Mahendran, [2]Raji Pandurangan
[1]Assistant Professor, Saveetha Engineering college, Chennai, Tamilnadu, India
[2]Associate Professor, Saveetha Engineering college, Chennai, Tamilnadu, India

ABSTRACT

5G becomes the cutting-edge technology in wireless communication to meet the requirements of higher data rates (up to 20 Gbps) and low latency communication. The conventional antennas failed to satisfy the requirements of 5G such as wider bandwidth, high gain, and radiation characteristics with beam steering technologies. Multi-antenna systems outperform the single antenna systems in order to meet the above requirements. These arrays of antennas increase the antenna performance but leads to mutual coupling between the elements. So, in order to increase the performance, a dielectric resonator is proposed and to reduce the mutual coupling DGS is proposed in this work. A 4*4 massive MIMO DRA antenna with the defected ground for mid-band 5G communication is projected and designed in this work. To ensure the performance of the antenna return loss, VSWR, ECC, CCL, and gain parameters are verified.

ICATEM24
IMP062

PADDY CROP DISEASE USING DEEP LEARNING NETWORK

[1]Srigitha.S Nath
[1]Professor, Department of ECE, Saveetha Engineering college, Chennai, Tamilnadu, India

ABSTRACT

This project offers an automated method for identifying *nutritional* deficiencies in paddy crops early by creating an automated system for the classification and identification of various crop diseases in agriculture. Not only does agriculture sustain human life, but it also plays a significant role in a nation's economy. Every year, millions of dollars are invested to protect the crops. The first step in preventing both qualitative and quantitative losses in agricultural production is the identification of the illnesses. A lack of nutrients hurts agricultural yield, which puts farmers at serious risk. Early identification of nutritional deficiencies allows for enhanced crop protection and increases production volume. The diseases are extremely difficult and inaccurate to identify manually. This makes image processing techniques necessary to overcome the limits of human eyesight and aid in the prompt and accurate diagnosis of diseases. This method proposes a novel way for diagnosing and categorizing diseases.

ICATEM24
GEN64

OPTIMIZING TURNING PROCESSES: ADVANCEMENTS IN DECISION-MAKING WITH THE MODIFIED MOORA METHOD

[1]K. Thirumalai, [2] G. Uthra, [3] V. Anandan
[1,3] Department of Mathematics, Saveetha Engineering College, Chennai
[2] Department of Mathematics, Pachaiyappa's College, Chennai

ABSTRACT

This study presents a comprehensive analysis of decision-making in turning processes, focusing on the application of the modified MOORA (Multi-Objective Optimization Based on Ratio Analysis) method. The research investigates the efficiency of the method in optimizing machining parameters to improve performance parameters such as material removal rate, surface roughness, and specific energy consumption. A thorough examination of experimental data from turning experiments on mild steel describes the advantages of the modified MOORA method over traditional approaches. The modified MOORA method demonstrates superior sensitivity to extreme values and robustness in handling fuzzy data, offering decision-makers a reliable tool for evaluation and ranking of alternatives. Through a series of sensitivity analyses, the study highlights the method's adaptability to varying weight combinations for decision criteria, providing insights into the relative importance of each criterion in the decision-making process. The results exhibit the significance of the modified MOORA method in enhancing decision-making efficiency and accuracy in turning processes. By integrating fuzzy logic and novel formulas for positive and negative ideal solutions, the method ensures a comprehensive evaluation of alternatives, leading to optimal parametric settings. This research contributes to the advancement of decision analysis methodologies in manufacturing processes, paving the way for improved performance and productivity in machining operations.

ICATEM24
PHY65

FABRICATION, OPTICAL AND MECHANICAL PROPERTIES OF GD-DOPED ZINC BORO-PHOSPHATE GLASS FOR WARM WHITE LED AND RADIATION SHIELDING APPLICATIONS

[1]Kalpana.S, [2]Vinothkumar, [3]Senthil.T.S
[1]Department of Physics, Saveetha Engineering College, Thandalam, Chennai 602 105, India
[2] Department of Physics, Erode Sengunthar Engineering College, Erode, 638057, India.

ABSTRACT

The melt-quench technique was used to produce the rare earth element Gd doped zinc Boro-phosphate glass. The amorphous nature of the Gd-doped zinc Boro-phosphate glass was verified by the powder X-ray diffraction pattern. With the use of FTIR, the functional groups of the Gd-doped zinc Boro-phosphate glass were determined. Calculations were made for the optical-bandgap energy and absorption using the Uv-Vis spectroscopic analysis. The optical parameters such as refractive index, optical conductivity, and extinction coefficient of the prepared glass was examined using uv spectroscopic analysis. Photoluminescence analysis, the excitation and emission spectra of Gd-doped zinc Boro-phosphate glass were investigated. The warm white color of the glass that was produced and verified by the chromaticity coordinates. The mechanical properties of the prepared glass was studied using Vicker's hardness tester. Phy-X software was employed to examine the gamma shielding behavior of Gd-doped zinc Boro-phosphate glass, including the mass attenuation coefficient, mean free path, half-value layer, and effective atomic number.

ICATEM24
MCD66

ENHANCING MULTI-CRITERIA DECISION-MAKING WITH DYNAMIC WEIGHT ADAPTATION IN A MODIFIED COPRAS FRAMEWORK

[1]N. Kavitha, [2]G. Uthra, [3] V.Anandan
[1,3] Department of Mathematics, Saveetha Engineering College, Chennai
[2] Department of Mathematics, Pachaiyappa's College, Chennai

ABSTRACT

As the field of Multi-Criteria Decision-Making (MCDM) continues to evolve, this research explores avenues to enhance the effectiveness and adaptability of the modified COPRAS method. The proposed approach incorporates dynamic weight adjustments in real-time, responding to changing conditions or user preferences. By combining advanced optimization techniques and fuzzy logic models, the modified COPRAS framework aims to handle uncertainties commonly found in decision-making scenarios. The study explores the method's application in specific domains like healthcare and finance, adapting it to meet domain-specific needs. The research emphasizes the practical implementation of the modified COPRAS method into user-friendly decision support software. It also explores ways to incorporate stakeholder preferences, aiming for methodologies that effectively consider various perspectives. The novel approach places the research as a significant contribution to the ongoing evolution of MCDM methodologies, providing a more robust and versatile tool for addressing complex decision-making challenges

ICATEM24
IMP67

INTEGRATION OF COMBINED COLOR AND CURVELET BASED TEXTURAL FEATURES FOR IMAGE RETRIEVAL SYSTEM

[1]Yesubai Rubavathi C

[1] Department of Computer Science and Engineering, Saveetha Engineering College, Chennai, Tamilnadu, India

ABSTRACT

This paper contributes the content based image retrieval system using novel local color textural features (LCC) and color local mesh pattern (CLMP), for the intention of increasing the performance of the image retrieval system. The suggested features are capable of exploiting the distinctive details derived from spatial color textural patterns of different spectral components within the local image region. In the majority of previous retrieval systems, gray texture features were utilized for textural feature extraction. Beside this, the opponent textural chromatic features extracting the texture patterns among spectral bands are also integrated in the creation of LCC and CLMP. The suggested system is able to provide excellent precision, recall rate. Broad experiments have been conducted on two benchmark databases, i.e., Corel-1k, MIT VisTex. Retrieval results show that image retrieval framework using color local texture features yields better precision and recall than retrieval approach using either by color or texture features.

ICATEM24
BHA68

BOVINE HEALTH ANALYTICS: HARNESSING AWS CLOUD FOR DATA-DRIVEN WELLNESS MONITORING

[1]Jaya.T, [2]Aarthy Amsalekha Sivakami S

[1]Professor, Department of ECE, Saveetha Engineering College, Chennai, Tamil Nadu.

[1] Assistant Professor, Department of CSE, Lourds Mount College of Engineering and Technology, Kanyakumari Dt. Tamil Nadu.

ABSTRACT

The health and welfare of livestock, play a pivotal role in the sustainability and profitability of the agricultural industry. Efficient monitoring and reporting of individual cow health statuses are vital for preventing outbreaks and sustaining herd productivity. This project use data analytics techniques to monitor the health status of cows. This involves collection data from various sources such as sensors and IoT devices attached to the cows, which gather information about parameters like age, activity levels, feeding patterns, days in milk, lactation stage and vital signs. The collected data is then processed and analysed using algorithms like K-means Clustering, Anomaly Detection and Long Short-Term Memory (LSTM) to classify the health status of individual cows. This could include identifying signs of illness or distress, prediction disease outbreaks, or monitoring overall wellness. By harnessing the AWS (Amazon Web Services) cloud infrastructure, this technology can handle large volumes of data, perform complex analytics tasks, and provide real-time insights into the health of cattle. It enables farmers to make informed decisions about their livestock management practices, leading to improved animal welfare enhanced productivity, and better sustainability in the agriculture industry.

ICATEM24
MOD69

ANALYSIS OF MULTI-OBJECT DETECTION IN VARIOUS DATASET BY APPLIED DEEP LEARNING APPROACHES.

[1]Dhanalakshmi Manickaraj

[1]Department of Information Technology, Saveetha Engineering College, Chennai, India

ABSTRACT

Object detection involves the process of identifying single or multiple objects within an image. Object detection is an important goal in the field of Computer Vision which is applicable to diverse application areas such as tracking objects, pedestrian detection, counting people in a crowd, face detection, medical imaging etc. It has been observed that Deep Neural Networks based learning methods are effective in object detection. The aim is to perform efficient object detection while addressing several challenges such as, 'detection of tiny objects', 'detecting objects from a cluttered background', 'occlusion' and different illumination conditions. In this paper we have tested object detection using two deep learning models VGG and ResNet where the performance comparison of both the models in various datasets has been done.

ICATEM24
GNN70

EARLY DETECTION OF COFFEE CROP KILLERS TO COMBAT AND PROTECT COFFEE PLANTATIONS USING VISION GNN

[1]Raveena Selvanarayanan, [2]Surendran Rajendran, [3]Sameer Algburi, [4]Osamah Ibrahim Khalaf, [5]Habib Hamam

[1,2] Department of Computer Science and Engineering, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai, India

[3]Al-Kitab University, College of Engineering Techniques, Kirkuk, Iraq

[4] Department of Solar, Al-Nahrain Research Centre for Renewable Energy, Al-Nahrain University, Jadriya, Baghdad, Iraq

[5] University de Moncton, Moncton, NB, E1A 3E9, Canada

ABSTRACT

Coffee plantations are constantly threatened by various insects, including Coffee Berry Borer (CBB), Mealybugs, Scales, and Leaf Miners. These pests can significantly reduce crop yields and quality. Existing work primarily relied on manual inspection methods, which are labor-intensive, time-consuming, and prone to human error. Current work proposes a novel approach for the early detection of coffee crop killers using Vision GNN (Graph Neural Network). Deep learning and computer vision identify pests from images captured in coffee plantations automatically. The proposed system will be trained on a dataset of coffee plant images containing these harmful insects. The Vision GNN learns to identify the visual characteristics of each pest and detect its presence in new images captured in coffee plantations. The Vision GNN architecture allows the model to not only recognize individual pests within images but also capture the relationships between them, potentially leading to improved detection accuracy. Compared with other models, vision GNN achieves high accuracy in identifying pest types, for real-world deployment in safeguarding coffee plantations and improving crop yields.

ICATEM24
PHY071

PERFORMANCE ENHANCEMENT OF SPHERICAL PRESSURE VESSEL THROUGH AUTOFRETTAGE PROCESS

[1]Keerthik Raju J, [2]Davidson Jebaseelan, [3]Jayaprakash J
[1]Student, Vellore Institute Technology, Department of Mechanical Engineering, Chennai
[2]Professor, Vellore Institute Technology, Department of Mechanical Engineering, Chennai
[3]Professor, Dr.MGR Educational and Research Institute, Chennai

ABSTRACT

In recent years, the autofrettage process has been proven as a pivotal process for the performance enhancement of various high-pressure containers. Because the elasto-plastic deformation of the inner layer has increased strain hardening, which causes more product life and avoids uncertain failures. We reviewed nearly 40 papers of various pressure vessel applications such as, common rail cylinder, hydrogen storage cylinder, space and defense vehicle parts. This paper focused on validating numerical studies of autorettage pressure, burst pressure, optimal elasto-plastic layer thickness, and compressive residual stresses using ANSYS with analytical equations. In this case study, we have taken three different materials, such as ASTM A723/A723M, HB7 and Ti-6Al-4V and examined analytical and numerical solutions such as compressive residual stresses, influenced by the Bauschinger effect, increases the burst pressure of the autofrettaged pressure vessel.

ICATEM24
SPM074

DESIGN AND SIMULATION OF SPIRAL BASED MICROCHANNEL FOR CELL SEPARATION

[1]Archana.T, [2]Nachammai.N,[3] Praveenkumar.S
[1] Assistant Professor, Department of ECE, Saveetha Engineering College, Chennai, Tamil Nadu, India
[2]Professor, [2]Annamalai University, Tamil Nadu, India
[1]Professor, Department of ECE, Saveetha Engineering College, Chennai, Tamil Nadu, India

ABSTRACT

The objective of this project is to design a microchannel of spiral structure for biomolecule separation. Microchannel in microtechnology is a channel with a hydraulic diameter below 1mm. Microchannels is used in fluid control and heat transfer. The Microchannel is designed by using Spiral shape structure which is working on the principle of Laminar Flow. Microparticle separation and concentration based on size has become indispensable in manybiomedical and environmental applications. In this paper we describe a passive microfluidic device with spiral microchannel geometry for complete separation of particles. The design takes advantage of the inertial lift and viscous drag forces acting on particles of various sizes to achieve differential migration, and hence separation, of microparticles. The dominant inertial forces and the dean rotation force due to the spiral microchannel geometry cause the larger particles to occupy a single equilibrium position near the inner microchannel wall. The smaller particles migrate to the outer half of the channel under the influence of Dean forces resulting in the formation of two distinct particle streams which are collected in two separate outputs.

ICATEM24
STM075

STRESSORS IN LEARNER'S LIFE AND ITS IMPACT ON THEIR EDUCATION

[1] Megala. J
[2]Associate Professor, Saveetha Engineering College , Thandalam, Chennai

ABSTRACT

Stressors in learner's affect their future due to the pressure in making decision. Learner s get stressed when their expectations do not meet. They are generally in a confused state due the various pressure they get from various angles. Learner's understanding, behavior, attitude and thoughts undergo lots of changes during their education in the college. Their future decision is made by considering various factors. After finalizing the goal by considering all aspects, there may be hindrance in achieving the same. Deviation from achieving the goal due the environment factors and pressure from various sources lead to stress. Many researchers' have identified the causes of stress among learners and have given suggestions to overcome the stressors so that the learners get right education in the right time and purpose of education is achieved by fulfilling the needs of the students.

ICATEM24
IMP076

IDENTIFICATION AND VISUALIZATION OF VULNERABLE ATHEROSCLEROTIC PLAQUE FOR PREDICTING RISK FACTORS OF HEART ATTACK

[1]Praveen Kumar S, [2]Aravind.T, [3]Ramya.S, [4]Lingaraja. D, [5]Dinesh Ram.G
[1,2] Professor, Department of Electronics and Communication Engineering, Saveetha Engineering College, Chennai, Tamilnadu, India.
[3,4,5] Research Scholar, Department of Electronics and Communication Engineering, Saveetha Engineering College, Chennai, Tamilnadu, India.

ABSTRACT

The greatest obstacle for imaging techniques is detecting vulnerable plaque in patients with high-risk lesions. In order to diagnose intraplaque haemorrhage, luminal thrombi and perforation of the vasa vasorum of an advanced plaque are secondary indicators. A multitude of non-stenotic lesions experience "expansion" of the plaque as a whole, with no corresponding reduction in luminal area. Following an expansion, myocardial infarction, also known as a heart attack, occurs. In order to achieve this, we conduct an analysis of the proposed method for coronary atherosclerosis and endeavour to devise an effective image segmentation process, including lumen and wall segmentation and arterial lumen extraction in centralline. By employing morphological operators such as dilation and erosion, undesirable background can be eliminated from a CT angiographic image. COMSOL/MATLAB is utilised to determine physical properties including fluid flow rate, coronary wall shear stress, plaque thickness, and plaque type. In conclusion, the outcomes contribute to the understanding of heart attack risk factors at different phases.

ICATEM24
SOC077

RISC BASED SOC DESIGN AND SIMULATION

[1]Aravind. T, [2] Praveen Kumar. S, [3] Lingaraja. D [4] Ramya. S, [5] Dinesh Ram. D
[1,2] Professor, Department of Electronics and Communication Engineering, Saveetha Engineering College, Chennai, Tamilnadu India
[3,4,5] Research Scholar, Department of Electronics and Communication Engineering, Saveetha Engineering College, Chennai, Tamilnadu India

ABSTRACT

A comprehensive RSIC (Reduced Instruction Set Computer)-based system-on-chip (SOC) design and simulation is the aim of this endeavour. In this context, the objective is to design a system-on-a-chip peripheral bus (SOC) that integrates the subsequent modules: a RISC-based processor, an interrupt supporter, programme and data memory, and peripherals. All of these components are interconnected within the SOC. In addition to a result multiplexer, the CPU of a RISC-based processor includes an instruction decoder, programme counter, and arithmetic/logic unit. Peripherals for this SOC include an 8-bit parallel I/O port and a 16-bit counter/timer. Then, the testbench was developed in order to validate the SOC's functionality.

ICATEM24
EIE079

REVIEW ON VARIOUS CONTROL STRATEGIES USED IN A CONTINUOUS STIRRED TANK REACTOR

[1]Anusha Rani.V [2]Merlin Inbamalar.T
[1]Assistant Professor (OG), Department of EIE, Saveetha Engineering College, Chennai, India
[2]Associate Professor, Department of EIE, Saveetha Engineering College, Chennai, India

ABSTRACT

The CSTR is an important equipment in the chemical industry. The CSTR has nonlinear characteristics that makes it useful in the control systems. Designing control strategies for a system that has dynamic and nonlinear characteristics is challenging. In this work, an analysis is made among the different types of control strategies used in the control of CSTR. There are variable parameters that can be controlled in the CSTR. Depending on the nature of the parameters that are to be controlled the control strategy is identified. For the successful implementation of the control strategy there is a requirement of a proper selection of models. This work deals with the identification of models for the sake of controller design and also various control strategies applied to the CSTR. The controller performance is analysed using the time domain specifications and frequency domain specifications.

ICATEM24
MVS080

INTELLIGENT ASSISTIVE JACO ROBOT ARM CONTROL USING MACHINE VISION SYSTEM

[1]Rajendra Thilahar C, [2]Kannan Arputharaj, [3]Rajendra Boopathy S, [4]Vijay Anand M
[1,4] Department of Computers Science and Engineering, Saveetha Engineering College, Chennai, India
[2] School of Computer Science and Engineering, VIT, Vellore Campus, India
[3]Department of Mechanical Engineering, College of Engineering Guindy, Anna University, Chennai-25, India

ABSTRACT

In the area of assistive robotics, grasping the object through a vision process is a complex problem solving technique. The main focus of this paper is to make the grasping action point to be on the Jaco2 robot arm so that it can apply more force on the fingers to pick the object. Control or Programming the Jaco robot can perform a desired action is a complex task and requires some training for the programmer and user. Developed streamline and accelerate tasks using an integrated 3-dimensional (3D) simulation software and augmented reality (AR) system to solve the above problem and enhance the quality of any robot operation processes. Applying a fuzzy rule based neural network system has the capability to communicate, transfer, optimize and test the data obtained from the AR and 3D environment to the real robot in a fast and efficient manner. Identifying the robot arm position error by the fitness function and using the neural network reduced the error in micro levels. These results are compared with the literature studies and prove best results.

ICATEM24
HSL081

A NOVEL FRAMEWORK FOR ENHANCING HEALTH SECTOR LABOR THROUGH PUBLIC-PRIVATE PARTNERSHIP

[1]Dunya, [2]Balamurugan Balusamy, [3]Nalinipriya.G
[1]PG Scholar, Westford University, Dubai
[,2]Associate Dean- Students, Shiv Nadar University,Delhi-NCR Campus, Noida, India
[3]Professor, Department of IT, Saveetha Engineering College, Chennai, India

ABSTRACT

The health labor market represents the key players that regulate the workforce, thus affecting the services provided to patients. This paper will discuss the healthcare workers in Iraq as an essential component of quality service delivery to achieve sustainable development goal 3 (SDG3). A thematic approach was applied to analyze the case for Iraq's healthcare employment through relevant literature and primary data from surveys. A framework was presented focusing on the wages, training and licensing, and productivity of health workers in Iraq, reduce pressure on the national budget allocated for the Ministry of Health (MOH) and enhance economic prosperity. Descriptive and analytic statistics were performed using the Minitab statistical program analyzing responses collected for surveys targeting the physicians, dentists, and pharmacists as they are the segment that requires training in the public sector. This resulted in the finding that a significant majority of private sector employees within the sample (83.5%) preferred continuing to work in the private sector if the licensing and training period were granted through private sector service, and 70% of the participant health workers would choose to work in the private sector if the retirement law was successfully implemented in it. Through a framework of outcome, it was recommended that a public-private partnership could pave the way toward an efficient health system and economic prosperity.