

THIRUTHANGAL NADAR COLLEGE

(Belongs to the Chennaivazh Thiruthangal Hindu Nadar Uravinmurai Dharma Fund)

A Self Financing Co-Educational College of Arts & Science
Affiliated to the University of Madras[2(f) Status Under UGC Act
Re-accredited at 'B++' Grade by NAAC & An ISO 9001:2015
Certified Institution Selavayal, Chennai, Tamil Nadu, India.



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on

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Encrypt and Decrypt Dual Crypt Algorithm

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Abstract: This study introduces the Dual Crypt Algorithm, a novel hybrid encryption technique that combines the LR method and the Exclusive OR (XOR) operation. Increasing data security and strengthening encryption's defenses against attackers are the primary objectives. With this approach, the output is initially encrypted using the Exclusive OR operation, and the plaintext is subsequently encrypted once more using the LR method. When decryption occurs, the same procedure is reversed. AMS Classification : 05C78

Keywords: Exclusive OR, LR method, Hybrid encryption, Symmetric Key Cryptography, Encryption and Decryption.

IoT-Based Motion-Triggered Voltage Monitoring System Using PIR Sensor

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Abstract: This paper presents the implementation of an Internet of Things (IoT) based solution for real-time motion detection and continuous voltage measurement to achieve more energy efficiency and reliability. In the model, a Passive Infrared (PIR) sensor is used to detect motion, while a voltage sensor is used to continuously measure the supply voltage. The motion detection system uses a low-power electronic device with a wireless-enabled feature to connect and transfer the data to an IoT cloud platform. This design monitors and ensures immediate notification when motion is detected, and continuously tracks the voltage consumption and electrical fluctuations to prevent power-related failures. By using dual function, this motion detection system increases the reliability and automated solution over conventional detection. The experiment was conducted with distance vs accuracy and response time with distance. The results obtained from experimental tests achieved a detection accuracy of 98% within a range of up to 7 meters. Hence, the proposed system demonstrates a low-cost and effective method for a smart energy monitoring application.

Keywords: IoT, Motion Detection, Voltage Sensor, PIR Sensor, Cloud Computing, Microcontroller

About the Institution

Thiruthangal Nadar College, established in the year 1997 as a college for men, was upgraded as a coeducational institution in 2002 to cater to the needs of women in North Chennai, thus empowering them. It is a self-financing institution affiliated with the University of Madras. Reaccredited with a B++ grade by the NAAC, holds 2(f) status under the UGC Act, affirming its eligibility for central assistance and recognition as a legitimate higher education provider. Additionally, the college is an ISO 9001:2015 certified institution, highlighting its structured quality management systems. It was instituted by the magnanimous members of the Chennaivazh Thiruthangal Hindu Nadar Uravinmurai Dharma Fund with a deep sense of generosity and compassion for the underprivileged student community. The benevolent members of the management have extended their exemplary services in the field of education with an exuberant spirit of facilitating and providing wider opportunities to the youth from different backgrounds. The motto of the institution, “Knowledge is Power,” is pre-eminently enshrined to ignite and enlighten the minds of the youngsters through education by dispelling the darkness of ignorance.

About the Conference

The 5th International Conference on Innovation in Information & Communication Technology (ICIICT-2026), hosted by Thiruthangal Nadar College in Chennai, India, is scheduled as a hybrid-mode event on February 27, 2026. This prestigious gathering, organized by the college's School of Computer Science, serves as a dynamic platform for researchers, academicians, industry professionals, and students to explore and present cutting-edge advancements in the rapidly evolving fields of ICT. Thiruthangal Nadar College, a NAAC-reaccredited (B++ grade) self-financing institution affiliated with the University of Madras and established in 1997, fosters holistic education and innovation, making it an ideal venue for such interdisciplinary discourse. The conference encompasses an extensive array of 20+ specialized themes, covering foundational and emerging technologies such as Artificial Intelligence and Machine Learning (including deep learning algorithms, AI in healthcare, natural language processing, and reinforcement learning), Data Science and Big Data Analytics (data mining, predictive analytics, big data frameworks, and visualization), Internet of Things (IoT) with focus on architectures, smart cities, security, and edge computing, Blockchain and Cryptography (applications, smart contracts, and DApps), Cybersecurity (threat detection, ethical hacking, and forensics), Cloud Computing (serverless and hybrid solutions), Quantum Computing (algorithms, cryptography, and machine learning), Human-Computer Interaction (UX design, VR/AR, and usability), Software Engineering (Agile/DevOps and quality assurance), Network and Communication Technologies (5G+, wireless sensors, and virtualization), Robotics and Automation, Bioinformatics, Digital Image Processing and Computer Vision (object detection and video analytics), Educational Technologies (e-learning and gamification), Green Computing for sustainability, Digital Signal Processing, Intelligent Transportation Systems (autonomous vehicles and V2X), Embedded Systems, and more—highlighting both core ICT pillars and forward-looking domains like quantum supremacy and sustainable IT practices.

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