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St. JOSEPH'S COLLEGE OF ENGINEERING

(An Autonomous Institution)

St. Joseph's Group of Institutions

OMR, CHENNAI - 119

OCTOBER 2025

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

S.No.	Title of the Events and Photographs	Details of the Event
1.	**COLLABARATIVE QUALITY INITIATIVES WITH OTHER INSTITUTIONS**  	Dr. Vijayalakshmi J from the Department of Artificial Intelligence and Data Science visited Pyroferus Technologies on 13th September 2025. The visit was part of the Industry-Institute Interaction initiative to strengthen collaboration and foster innovation. She met Ms. Rekha, Managing Director, and Mr. Somu, Architect, during the interaction. Discussions focused on exploring potential avenues for partnership and mutual knowledge exchange. The Department of Artificial Intelligence and Data Science organized an Industry–Institute Interaction visit on 17th September 2025. Mr. Vinodh Kumar K visited Nodlehs AI 256 Pvt Ltd and met Mr.

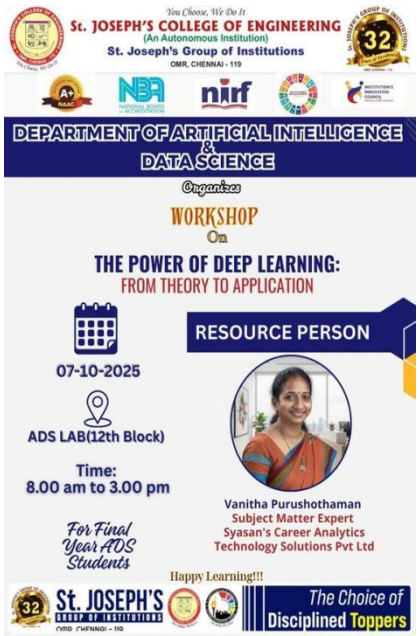
		Praveen, Managing Director, to discuss collaboration opportunities. The visit aimed to strengthen industry–academia partnerships and explore knowledge exchange initiatives. A key outcome was the agreement to establish a Memorandum of Understanding (MoU) with the company.
2.	**INDUSTRIAL VISIT**	-
3.	**GUEST LECTURE**	-
4.	**ADS CLUB ACTIVITY**	-
5.	**FDP/WORKSHOP/CONFERENCE/HACKATHON (ATTENDED /ORGANIZED)** 	The Department of Artificial Intelligence and Data Science of St. Joseph's College of Engineering proudly congratulates its IV year students for their outstanding achievement. Team Dream Coders secured Second Prize in the National Level TECHNOATHON, a prestigious event conducted by the Department of Electronics and Instrumentation Engineering. The competition was held on 18th and 19th September 2025 at St. Joseph's College of Engineering, OMR, Chennai. The team showcased their innovative skills and

problem-solving abilities, competing against participants from various institutions. Their remarkable effort earned them a cash prize of Rs. 3000, bringing laurels to the department. The winning team members were Sankari K, Sairam D R, Rehan C Bejoy, Kevin J C, Priyadharshini R, and Sri Akshita Devan. Faculty members and peers applauded the students for their dedication and teamwork.

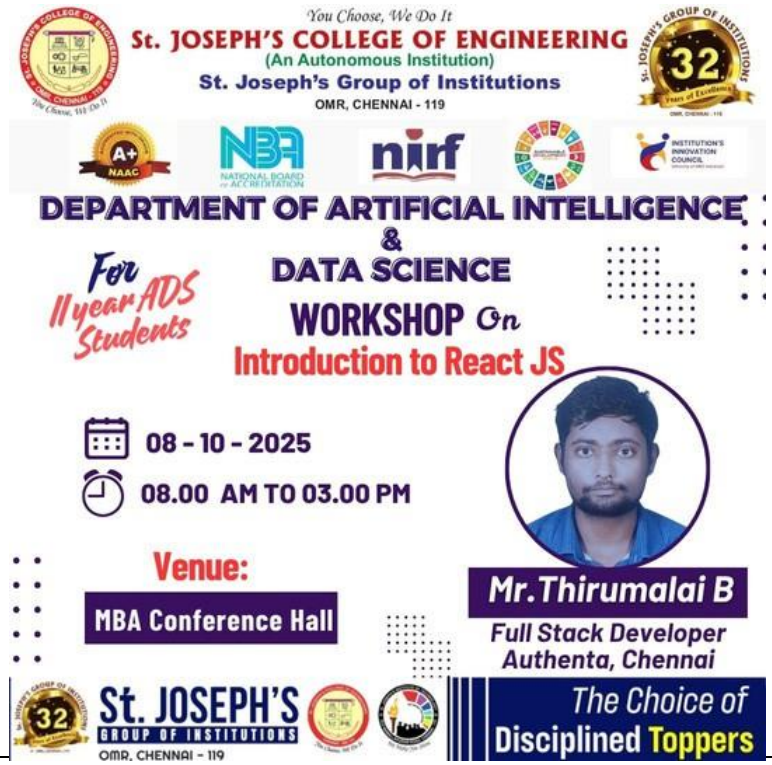
The Department of Artificial Intelligence and Data Science of St. Joseph's College of Engineering, OMR, Chennai, is organizing a workshop titled "Code to Success" on 4th September 2025 from 9:30 AM to 1:00 PM at Laurel Hall (Placement Block). This exclusive workshop is designed for 3rd year ADS students with the objective of enhancing their coding abilities, problem-solving mindset, and industry readiness. The session will be led by Mr. N. Jeyaprakash, Director of ATC Technologies, Chennai.

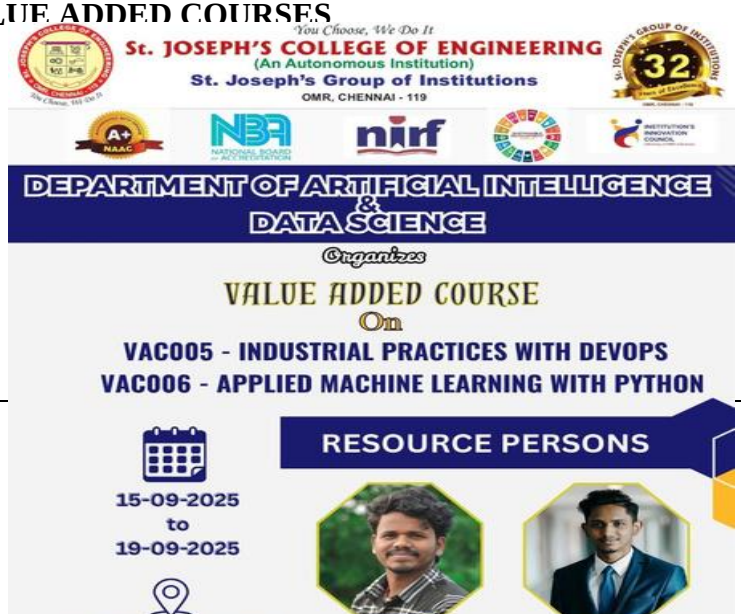
The Department of Artificial Intelligence and Data Science at St. Joseph's College of Engineering organized DATAVIZ, a hands-on workshop on Data Visualization, in association with the Data Analytics Club. The event was conducted on 23rd September 2023 at the AV Hall (Library) and was exclusively designed for first- and second-year ADS

students. The program aimed to introduce students to data visualization concepts and tools widely used in industry. The session for first-year students focused on building a strong foundation in visualization techniques and was held from 8:30 AM to 10:30 AM. For second-year students, the workshop extended till 1:00 PM and included a Data Visualization Competition, giving them a platform to apply their knowledge creatively.

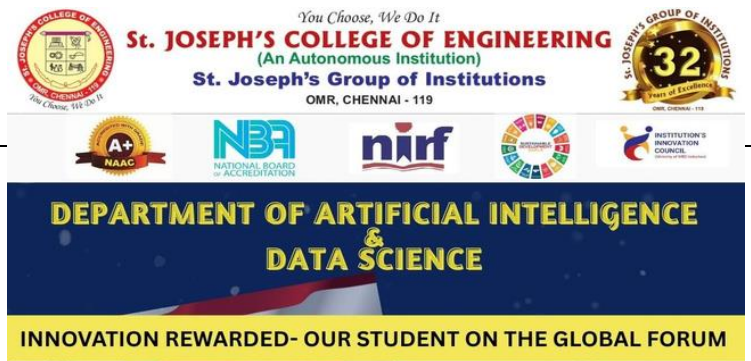


The Department of Artificial Intelligence and Data Science, St. Joseph's College of Engineering, organized a workshop on "The Power of Deep Learning: From Theory to Application" on 7th October 2025 at the ADS Lab (12th Block). The session was conducted by Ms. Vanitha Purushothaman, Subject Matter Expert at Syasan's Career Analytics Technology Solutions Pvt. Ltd.

		The Department of Artificial Intelligence and Data Science of St. Joseph's College of Engineering organized a workshop on "Introduction to React JS" on October 8, 2025, exclusively for the II Year ADS students. The session was held at the MBA Conference Hall from 8:00 AM to 3:00 PM. The resource person, Mr. Thirumalai B, Full Stack Developer at Authenta, Chennai.
6.	**SYMPOSIUM** 	The Department of Artificial Intelligence and Data Science at St. Joseph's College of Engineering organized Data Echelon'25, a national-level technical symposium, on 13th September 2025. The symposium featured a variety of exciting events such as Game of Thrones

		Uxlerate Artificial Aesthetics Prompt Wars and Data Verse. It is designed to test creativity, problem-solving abilities, and technical expertise. The event encouraged collaboration, innovation, and competitive spirit among participants. With free registration and a prize pool of Rs. 30,000, the symposium attracted widespread participation. Student coordinators Mohammed Naazil A.A, Akshaya Shree, and Shaik Farzan Ali S played a crucial role in organizing the event successfully. The program was convened by Dr. L. Sherly Pushpa Annabel and supported by staff coordinators Dr. R. Ramya and Ms. Kalpana S. Participants engaged enthusiastically, making the event lively and impactful. The symposium provided a platform for students to gain exposure to real-world applications of AI and data science
7.	**STTP**	-
8.	**VALUE ADDED COURSES**  	The Department of Artificial Intelligence and Data Science of St. Joseph's College of Engineering organized a Value Added Course for third-year ADS students on "Industrial Practices with DevOps" (VACO05) and "Applied Machine Learning with Python" (VACO06) from 15th to 19th September 2025. The sessions were conducted at the ADS Lab (12th Block) and

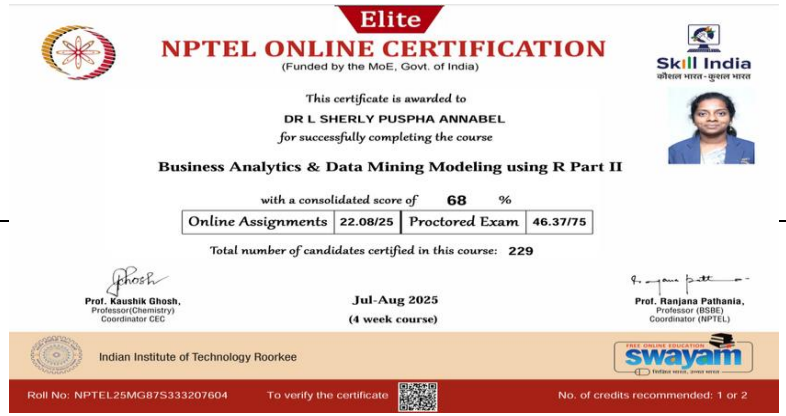
		classrooms, providing students with a perfect blend of theory and hands-on learning. The course was facilitated by Mr. Murugan M, DevOps Engineer at Cloudelu, and Mr. Santhosh Voctor Amburose, Sr. Business Analyst at Freshworks, who shared their industry expertise and guided students through real-world applications. The Department of Artificial Intelligence and Data Science of St. Joseph's College of Engineering organized a five-day Value Added Course from 15th to 19th September 2025 for final-year ADS students. The program included three courses – Ethical Hacking & Cyber Security (VAC003), Industrial Practices with DevOps (VAC005), and Applied Machine Learning with Python (VAC006). Sessions were held in the ADS Lab (12th Block) and classrooms, combining theory with hands-on practice. Ms. Rajeswari Ravi from Gainwell Technologies trained students on ethical hacking techniques and cybersecurity best

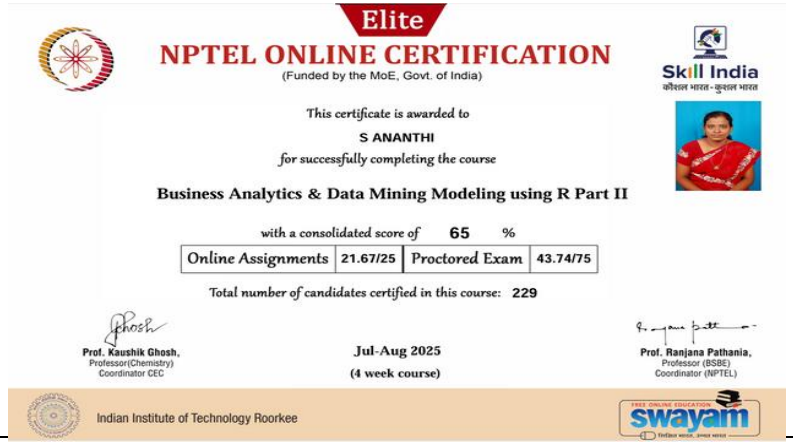
		practices. Mr.Rajendhiran from Accenture guided students through DevOps workflows, CI/CD pipelines, and industry use cases. Machine Learning sessions were handled by Mr. Pradhan V from Zero2infynite and Ms. Kamala P from Syasans Career Analytics, focusing on Python-based model building. Students actively participated, worked on mini-projects, and gained exposure to real-world tools like Git, Docker, and Jenkins.
9.	**STUDENTS ACHIEVEMENTS/COMPETITION ATTENDED BY STUDENTS**  	Rajashree N has successfully attained the Microsoft Power BI Data Analyst Associate Certification, demonstrating her expertise in data analysis and visualization using Microsoft Power BI. This achievement highlights her dedication, technical skills, and commitment to excellence in the field of Artificial Intelligence and Data Science. This success demonstrates his technical proficiency and dedication, adding great value to the reputation of the department and the institution. Jeevitha M, from the Department of AI & Data Science (2021-2025), has made our college proud.

		She has been awarded grants totaling Rs. 12 Lakhs from AWS. This includes a full sponsorship to attend AWS re: Invent in Las Vegas from December 1-5. AWS re: Invent is the flagship global event for cloud innovation. Jeevitha is an AWS Community Builder and a former AWS Cloud Captain. Her achievement highlights the college's commitment to fostering innovation. St. Joseph's College of Engineering, an autonomous institution on OMR, Chennai, continues to empower its students. This global recognition underscores the quality of its AI & Data Science programs. The institution is proud to be the choice of disciplined toppers. Congratulations to Jeevitha for this outstanding accomplishment!
		Ashwin Jai R.A has successfully earned the eJPT (eLearnSecurity Junior Penetration Tester) certification, a globally recognized credential in cybersecurity. This certification demonstrates his ability to perform penetration testing and vulnerability assessments in real-world environments. The eJPT program, offered by INE Security, tests practical skills in network

		penetration, web application exploitation, and security assessment techniques.
		Dharunika B has demonstrated exceptional dedication to professional development by successfully earning two prestigious ServiceNow certifications. She first achieved the Certified System Administrator credential on March 10, 2025, with certification number 26881708. Building on this foundational knowledge, she further advanced her expertise by attaining the Certified Application Developer certification on August 14, 2025, under certification number 27377824.
		The Smart India Hackathon 2025 – Make-A-Thon 2.0 was a proud moment for the Department of Artificial Intelligence and Data Science at St. Joseph's College of Engineering. The team

	 	"Sentinels" from the Software Domain secured the Winner's title and was awarded a cash prize of ₹5000. The talented third-year students of ADS who formed the winning team were Ajaysrinivasan, Abhinav, Brayon Moses, Nithyasri, Prijitha, and Eric Jeevan. Their innovative contributions and teamwork showcased their strong problem-solving skills and creativity, bringing laurels to the department and the institution. Kishor N from St. Joseph College of Engineering has brought pride to his institution by securing the First Prize in the Techno Quiz event at ELECTROTHRIVE 2025, a National Level Technical Symposium.

		Jovita S from St. Joseph College of Engineering participated in the Techno Quiz event at ELECTROTHRIVE 2025, a National Level Technical Symposium organized by the Department of Electronics and Communication Engineering, Vel Tech High Tech Dr. Rangarajan Dr. Sakunthala Engineering College, Chennai. Nishanth S from St. Joseph's College of Engineering achieved First Place in the Treasure Hunt event at ELECTROTHRIVE 2025, a National Level Technical Symposium. The event was organized by the Department of Electronics and Communication Engineering at Vel Tech High Tech Dr. Rangarajan Dr. Sakunthala Engineering College, Avadi, Chennai, in September 2025.
10.	**STAFF NPTEL CERTIFICATION** 	Dr. L. Sherly Pushpa Annabel has successfully completed the NPTEL Online Certification course on Business Analytics & Data Mining Modeling using R Part II. The course was conducted by the Indian Institute of Technology Roorkee and funded by the Ministry of Education, Government of India. She secured an Elite grade with a consolidated score of 68%. Her performance

	 	comprised 22.08/25 in Online Assignments and 46.37/75 in the Proctored Examination. Dr M P Rajakumar has been awarded the NPTEL Elite Certificate for successfully completing the course Introduction to Operating Systems. The course was conducted by the Indian Institute of Technology, Madras, under the NPTEL online certification program funded by the MoE, Government of India. The program was held during July to September 2025 and spanned eight weeks. Rajakumar achieved a consolidated score of 67%, with 23.58/25 in online assignments and 43.62/75 in the proctored exam. Ms. S. Ananthi from St. Joseph's College of Engineering has successfully completed the NPTEL Online Certification course on Business Analytics & Data Mining Modeling using R Part II during Jul–Aug 2025. She earned an Elite Certificate with a consolidated score of 65%, scoring 21.67/25 in online assignments and 43.74/75 in the proctored exam. This course, funded by the Ministry of Education, Government of India, was offered through IIT Roorkee and IIT Madras under the SWAYAM platform.
11.	**INDUSTRIAL PROJECTS DONE BY STUDENTS**	-

12.	**PUBLICATIONS(ONLY PUBLISHED) DETAILS** **Optimized Video Streaming in Mobile Environments: A Novel Multihead Autoencoder and Red-Tailed Hawk Optimization Framework** **By** Are you this author? Samiayya, D (Samiayya, Duraimurugan) ; Ambayiram, C (Ambayiram, Chinnasamy) ; Natarajan, H (Natarajan, Hariprasad) ; Palani, RM (Muthusamy Palani, Rajakumar) View Web of Science ResearcherID and ORCID (provided by Clarivate) **Source** DOI: 10.1080/03772063.2025.2534492 **Early Access** JUL 2025 **Indexed** 2025-08-10 **Document Type** Article; Early Access **Abstract** In recent years, adaptive video streaming over wireless multimedia sensor networks has gained significant attention due to the growing demand for real-time video delivery in mobile environments. However, traditional video transmission methods tend to face challenges in maintaining high video quality while adjusting to changing network conditions. To address this limitation, we propose a novel Interaction Crossover Red-tailed Hawk Optimized Multihead Autoencoder Matrix-factorization model for super-resolution transmission in adaptive video streaming over wireless multimedia sensor networks. Multihead autoencoder matrix-factorization architecture and an optimization method inspired by red-tailed hawks are two advanced optimization algorithms that are combined to create the proposed model. This combined technique not only enhances video resolution but also modifies transmission parameters dynamically, effectively optimizing video quality, bandwidth usage, and latency, regardless of challenging network conditions. The selection of the proposed model is based on its effective approach to managing video quality and network resources in real-time. This model adapts seamlessly to various network conditions, including bandwidth shifts due to user movement, through an interactive crossover strategy. This innovative approach overcomes the static quality limitations of previous systems, leading to substantial improvements in playback stability, throughput, and clarity of the video content. The experimental results demonstrated that the proposed model surpassed the existing models, achieving impressive metrics: a Peak Signal-to-Noise Ratio of 42.5 dB, a throughput of 900 kbps, and a playback stability of 98%. Overall, the proposed framework exhibits significant potential for adaptive video streaming systems in dynamic and mobile environments. **Exergy efficiency optimization of a water-based titanium dioxide nanofluid hybrid solar collector using advanced machine learning models** **By** Are you this author? Natesan, P (Natesan, Poyyamozhi) ; Rajakumar, MP (Rajakumar, M. P.) ; Sreevidya, RC (Sreevidya, R. C.) ; Srimanickam, B (Srimanickam, B.) ; Vellaiyan, S (Vellaiyan, Suresh) ; Van Minh, N (Van Minh, Nguyen) View Web of Science ResearcherID and ORCID (provided by Clarivate) **Source** Volume: 74 DOI: 10.1016/j.csite.2025.106815 **Article Number** 106815 **Published** OCT 2025 **Indexed** 2025-09-01 **Document Type** Article **Abstract** This study investigates the exergy efficiency of a hybrid solar collector using water and water-based titanium dioxide (TiO2) nanofluids, employing advanced machine learning (ML) models to optimize performance evaluation. Support Vector Regression (SVR), Random Forest (RF), and a hybrid approach incorporating Wavelet Transform (WT) were utilized to assess the system's efficiency. Three statistical metrics, such as mean absolute error (MAE), coefficient of determination (R2), and root mean square error (RMSE), denoted as E1, E2, and E3 respectively, were used to evaluate model performance. Two experimental setups were implemented: the first involved water flow rates of 0.5, 1.0, and 1.5 L per minute, while the second employed a water-based TiO2 nanofluid with a 0.1 % volume concentration. Results indicate a direct correlation between increased mass flow rates and enhanced exergy efficiency, with energy efficiency ranging from 7.1 % to 11.1 % for water, and 12.8 %-20.4 % for the TiO2 nanofluid. The integration of WT with ML models significantly improved predictive accuracy, achieving final metrics of 0.874 (E1), 2.212 (E2), and 3.118 (E3). Wind speed, ambient temperature, and solar radiation were identified as critical factors influencing system performance, with hybrid models outperforming individual ML models in both accuracy and reliability.	Dr. M.P. Rajakumar, along with his co-authors Samiyaya D., Ambayiram C., Natarajan H., and Palani R.M., has contributed a significant research article titled “Optimized Video Streaming in Mobile Environments: A Novel Multihead Autoencoder and Red-Tailed Hawk Optimization Framework.” This work was published in the reputed Scopus-indexed journal Journal of the Indian Institute of Science (2025, Early Access). Dr. M.P. Rajakumar, together with his co-authors Natesan P., Sreevidya R.C., Srimanickam B., Vellaiyan S., and Van Minh N., has published a notable research article titled “Exergy Efficiency Optimization of a Water-Based Titanium Dioxide Nanofluid Hybrid Solar Collector Using Advanced Machine Learning Models.” The study focuses on

enhancing the exergy efficiency of hybrid solar collectors by employing advanced machine learning models such as Support Vector Regression, Random Forest, and a Wavelet Transform-based hybrid approach.

Conferences > 2025 11th International Confe...

Enhancing Classification Performance in Breast Tissue Diagnosis Using TPE-Based Hyperparameter Optimization

Publisher: IEEE | Cite This | PDF

Kotteeswaran Rangasamy ; S. Karthiyayini ; Dileep Pulugu ; Nabeel Amre ; R. Thiagarajan ; R. Krishnamoorthy All Authors

11 Full Text Views

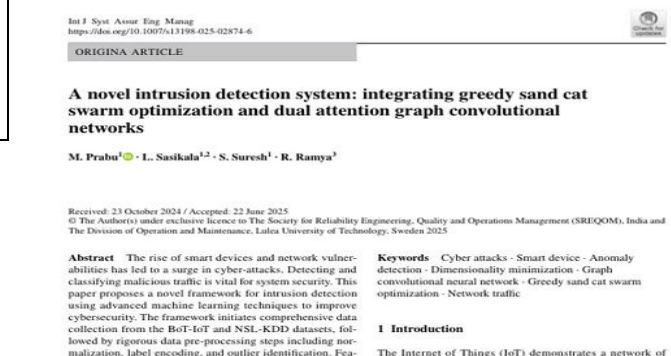
Abstract
Document Sections
I. Introduction
II. Proposed System
III. Result and Discussion
IV. Conclusion
Authors
Figures
References
Keywords
Metrics
More Like This

Abstract:
Accurate classification of breast tissue is important for the early medical conditions like carcinoma, fibro-adenoma, and mastopathy. Machine learning models hold promise for automating it, but their performance significantly depends on the selection of the optimal hyperparameters. Traditional optimization techniques, such as grid search or random search, are inefficient and create too much computational cost in handling high-dimensional parameter spaces. In this paper, we present the use of Tree-Structured Parzen Estimator (TPE), a Bayesian probabilistic optimization technique, to optimize hyperparameters for five already wellknown machine learning classifiers: Logistic Regression, SVM, Decision Tree, Random Forest, and k-NN. We adopt this approach to the Breast Tissue Dataset as our benchmark dataset to classify various types of breast tissues. We assess our models with respect to four key performance metrics: Accuracy, Precision, Recall, and F1-Score. The experiments show that TPE optimization leads to consistent improvements in classification accuracy for all the models. For precision, recall, and F1-score, significant gains were observed. Besides, TPE improves model generalization by focusing the search on promising regions of the hyperparameter space, reducing the computational cost compared to traditional methods. This work shows the potential of TPE as a powerful tool for hyperparameter optimization in medical machine learning tasks, providing a more efficient and effective alternative to conventional optimization strategies.

Published in: 2025 11th International Conference on Communication and Signal Processing (ICCSP)

Date of Conference: 05-07 June 2025
DOI: 10.1109/ICCSP64183.2025.11088705
Date Added to IEEE *Xplore*: 29 July 2025
Publisher: IEEE
ISBN Information:
Conference Location: Melmaruvathur, India
ISSN Information:

We are proud to announce that Dr. Kotteeswaran Rangasamy presented his research at the 16th International IEEE Conference on Computing, Communication and Networking Technologies (ICCCNT 2025). The event was held at IIT Indore, Madhya Pradesh, from July 6th to 11th, 2025, in association with IEEE EPS and AICTE. His paper is titled “Performance Benchmarking of AI Conversational Models: A Study on ChatGPT and DeepSeek.” The research benchmarks state-of-the-art conversational AI models in terms of accuracy, reliability, and efficiency.



Int J Syst Assur Eng Manag
https://doi.org/10.1007/s13198-025-02874-6

ORIGINA ARTICLE

A novel intrusion detection system: integrating greedy sand cat swarm optimization and dual attention graph convolutional networks

M. Prabu[1] · L. Sasikala[1,2] · S. Suresh[1] · R. Ramya[3]

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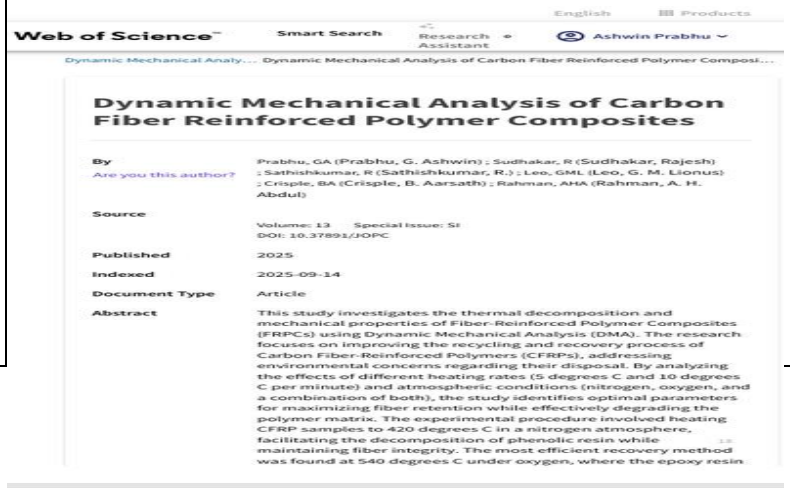
© The Author(s) under exclusive licence to The Society for Reliability Engineering, Quality and Operations Management (SREQOM), India and The Division of Operation and Maintenance, Lulea University of Technology, Sweden 2025

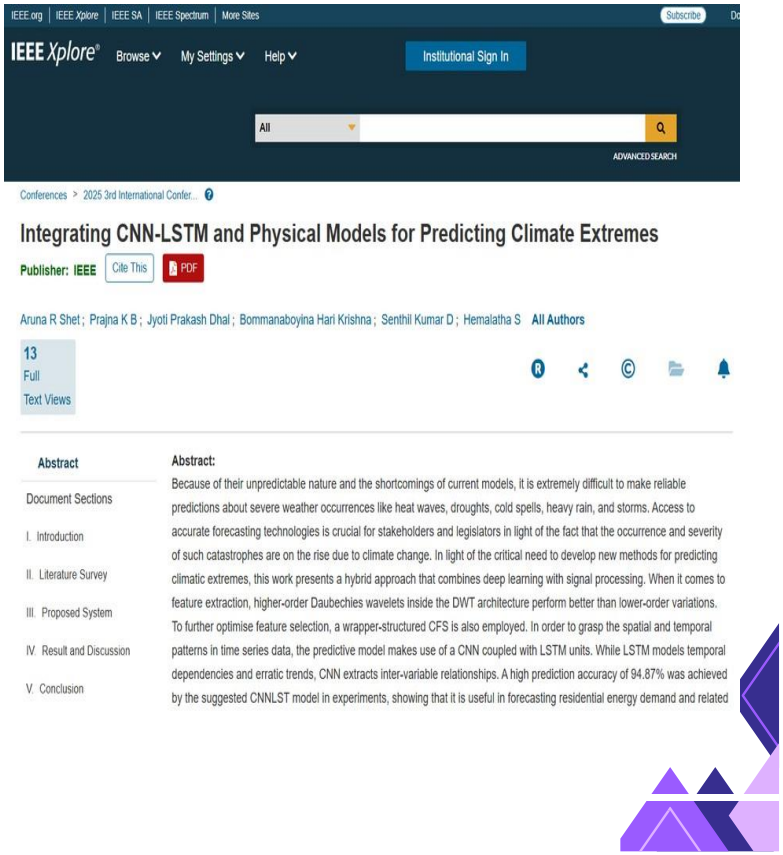
Abstract The rise of smart devices and network vulnerabilities has led to a surge in cyber-attacks. Detecting and classifying malicious traffic is vital for system security. This paper proposes a novel framework for intrusion detection using advanced machine learning techniques to improve cybersecurity. The framework initiates comprehensive data collection from the BoT-IoT and NSL-KDD datasets, followed by rigorous data pre-processing steps including normalization, label encoding, and outlier identification. Fea-

Keywords Cyber attacks · Smart device · Anomaly detection · Dimensionality minimization · Graph convolutional neural network · Greedy sand cat swarm optimization · Network traffic

1 Introduction

The Internet of Things (IoT) demonstrates a network of

		Dr. R. Ramya, from the Department of Artificial Intelligence and Data Science, St. Joseph's College of Engineering, has successfully published a research paper titled "A Novel Intrusion Detection System: Integrating Greedy Sand Cat Swarm Optimization and Dual Attention Graph Convolutional Networks." This innovative work introduces a new framework for intrusion detection that leverages advanced machine learning techniques to enhance cybersecurity. Mr. R. Sathishkumar, Assistant Professor, has co-authored and published a research article titled "Dynamic Mechanical Analysis of Carbon Fiber Reinforced Polymer Composites" in Volume 13, Special Issue: SI of an indexed journal, DOI: 10.37891/JOPC. This study explores the thermal decomposition and mechanical properties of Fiber-

		Reinforced Polymer Composites (FRPCs) using Dynamic Mechanical Analysis (DMA). Mr. Senthil Kumar D, along with his co-authors, has published a research paper titled “Integrating CNN-LSTM and Physical Models for Predicting Climate Extremes” in the IEEE Xplore Digital Library as part of the 2025 3rd International Conference.
13.	**FUNDED PROJECTS**	-
14.	**STAFF CONFERENCE PRESENTATION and PATENT PUBLISHED** 	

We are proud to announce that Dr. Kotteeswaran Rangasamy presented his research paper titled “Performance Benchmarking of AI Conversational Models: A Study on ChatGPT and DeepSeek” at the 16th International IEEE Conference on Computing, Communication and Networking Technologies (ICCCNT 2025). His work focuses on evaluating and comparing the performance of advanced AI conversational models, contributing valuable insights to the field of Artificial Intelligence and Natural Language Processing.


DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
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SMC IEEE

CERTIFICATE OF PRESENTATION

This is to certify that

A Vijay

has sucessfully presented a paper entitled

Deep Learning based Classification of Copy Number Variations in Cervical Carcinoma using Array Comparative Genomic Hybridization Data

at the

5th International Conference on Soft Computing for Security Applications (ICSCSA-2025) organised by Dhirajlal Gandhi College of Technology, Salem, Tamilnadu on 4th-6th August 2025.

N. Amutha Priya
Session Chair

DR. R. SARAVANAN
Conference Chair

DR. A. SELVARAJ
Principal

Mr. A. Vijay successfully presented his research paper titled “Deep Learning based Classification of Copy Number Variations in Cervical Carcinoma using Array Comparative Genomic Hybridization Data” at the 5th International Conference on Soft Computing for Security Applications (ICScSA-2025). His research focuses on leveraging deep learning techniques to classify copy number variations in cervical carcinoma, providing a significant contribution to the application of AI in healthcare and genomic data analysis.

2025 IEEE 4th International Conference for Advancement in Technology (ICONAT)

IEEE BOMBAY SECTION

19th – 21st September 2025

Certificate

This is to certify that Dr./Prof./Mr./Ms. Rajakumar M P has presented paper entitled Accurate Prediction of Phishing URLs Using Semi-Supervised GAN-BERT Model in 2025 IEEE 4th International Conference for Advancement in Technology (ICONAT) during 19th to 21st September 2025.

General Chair
Dr. P. V. Kadole

Convenor
Dr. Amol C. Adamuthe

Dr. Rajakumar M. P has actively participated and presented his research paper titled “Accurate Prediction of Phishing URLs Using Semi-Supervised GAN-BERT Model” at the 2025 IEEE 4th International Conference for Advancement in Technology (ICONAT). The event was organized by Rajarambapu Institute of Technology under the IEEE Bombay Section and held from 19th to 21st September 2025.

Certificate of Presentation

This is to certify that

M P Rajakumar

has successfully presented the paper titled

Classification of Breast Histology Slides into Benign/Malignant Class with Deep Learning Scheme

		Dr. M. P. Rajakumar has actively participated and presented his research paper titled “Classification of Breast Histology Slides into Benign/Malignant Class with Deep Learning Scheme” at the 7th International Conference on Innovative Data Communication Technologies and Application (ICIDCA 2025). The conference was organized by RVS College of Engineering and Technology, Coimbatore, India, and held from 6th to 8th October 2025 Dr. M. P. Rajakumar has actively participated and presented his research paper titled “YOLOv8-Powered Helmet Detection for Intelligent Roadside Safety Monitoring” at the International Conference on Sustainable Communication Networks and Application (ICSCN 2025).

(12) PATENT APPLICATION PUBLICATION
(19) INDIA

(54) Title of the invention : A Deep Learning Approach to IoT Security: Detecting and Preventing Cyber Threats

(71)Name of Applicant :
1)Dr. Rex Cyril R
2)Sachin Singh
3)P. Brinda
4)Mr. Pronab Kumar Adhikari
5)Gajanan Vishwanath Ghuge
6)Dr. G Karthikeyan
7)Dr. R. Baghia Laxmi
8)Dr. Kala S
9)S. Surender
10)Sumithamaraj
Name of Applicant : NA
Address of Applicant : NA
(72)Name of Inventor :

(57) Abstract :

Dr. R. Baghia Laxmi, Associate Professor in the Department of Artificial Intelligence and Data Science at St. Joseph's College of Engineering (Autonomous), has recently published a patent titled "A Deep Learning Approach to IoT Security: Detecting and Preventing Cyber Threats." This groundbreaking invention introduces an AI-powered cybersecurity system tailored for Internet of Things (IoT) environments.

(12) PATENT APPLICATION PUBLICATION
(21) Application No.202511056114 A
(19) INDIA
(22) Date of filing of Application :11/06/2025
(43) Publication Date : 27/06/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR MULTI-SPECTRAL IMAGE FUSION TO ENHANCE SCENE UNDERSTANDING USING ADAPTIVE FEATURE EXTRACTION AND DEEP LEARNING

(51) International classification :G06V10/80, G06N3/08, G06V10/44
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional

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4)Mrs. T. Keerthana Jerine
5)Dr. M. Laavanya
6)Dr. Sudeep Saraswat
7)Dr. Pradeep Pokhriyal
8)Dr. B. Senthil Kumar
9)Mrs. N. Nithya
10)Dr. Krishnanaik Vankdoth
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2)Dr. Ravula Divya
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3)Dr. Vemuri Venkata Phani Babu
Address of Applicant :Professor, Department of Mechanical Engineering, Dadi Institute of Engineering & Technology, Anakapalle, Visakhapatnam, Andhra Pradesh, India. Pin Code:531002
4)Mrs. T. Keerthana Jerine
Address of Applicant :Assistant Professor, J.J College of Engineering and Technology, Ammapettai, Trichy, Tamil Nadu, India. Pin Code:620009
5)Dr. M. Laavanya

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/08/2025

(21) Application No.202541079874 A
(43) Publication Date : 19/09/2025

(54) Title of the invention : Quantum Computing Algorithms for Solving Large-Scale Optimization Problems

(51) International classification :G06N0010000000, G06N0010400000, G06N0010600000, G06N0010200000, G06F0017110000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. R. Senjudarvannan
Address of Applicant :M.Sc., M.Phil., SET., Ph.D. Professor and Head, Department of Physics, Jamcom Institute of Technology, Karumalhampatty, Coimbatore, Tamil Nadu, India. ---------- ----------
2)Dr. Syed Humain
3)Kaviarasi J
4)Dr. Bhushankumar Narayan Shinde
5)Dr shilpee Patil
6)Dr. P. Karthigaikumar
7)P. Durga Devi
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. R. Senjudarvannan
Address of Applicant :M.Sc., M.Phil., SET., Ph.D. Professor and Head, Department of Physics, Jamcom Institute of Technology, Karumalhampatty, Coimbatore, Tamil Nadu, India. ---------- ----------
2)Dr. Syed Humain
Address of Applicant :Department of Computer Science and Engineering (AI and ML), TKR College of Engineering and Technology, Meerpet, Balapur, Saroornagar, Hyderabad – 500097, Telangana, India. ---------- ----------
3)Kaviarasi J
Address of Applicant :Assistant Professor, Department of Artificial Intelligence and Data Science, St.Joseph's College of Engineering, Chennai, Tamil Nadu, India ---------- ----------
4)Dr. Bhushankumar Narayan Shinde
Address of Applicant :Associate Professor, Department of Electronics and Telecommunications Engineering, MVPS's K.B.T College of Engineering, Nashik, India. ----------
5)Dr shilpee Patil
Address of Applicant :Associate Professor, Galgotias College of Engineering & Technology, Greater Noida, India. ----------
6)Dr. P. Karthigaikumar
Address of Applicant :Professor, Department of Electronics and Communication Engineering, Karpagam College of Engineering, Coimbatore -641032 ---------- ----------
7)P. Durga Devi
Address of Applicant :Assistant Professor, ECE Department, Mahatma Gandhi Institute of Technology, Hyderabad, Telangana, India. ---------- ----------

(57) Abstract :
Quantum Computing Algorithms for Solving Large-Scale Optimization Problems ABSTRACT: A hybrid quantum-classical optimization system for solving large-scale optimization problems that achieves practical quantum advantage over classical methods. The system integrates quantum processing units with classical processors through a coordinated interface that manages iterative optimization processes. Key innovations include intelligent parameter initialization using problem-specific heuristics rather than random starting points, adaptive circuit depth management, and direct constraint integration into quantum circuits. The invention addresses critical limitations of existing quantum optimization by ensuring solutions satisfy real-world constraints and feasibility requirements. The hybrid architecture alternates between quantum exploration of solution spaces and classical parameter optimization for convergence acceleration. Built-in noise mitigation enables reliable operation on current noisy quantum devices. The system demonstrates measurable performance advantages, generating solutions in seconds compared to minutes or hours required by classical methods. Applications include financial portfolio optimization, supply chain management, molecular design, and energy management. Cloud-based deployment with enterprise integration enables broad adoption without dedicated quantum hardware requirements.

No. of Pages : 14 No. of Claims : 9

The Patent Office Journal No. 38/2025 Dated 19/09/2025 92494

Dr. B. Senthil Kumar, Associate Professor St.Joseph's College of Engineering, Chennai, Tamil Nadu, has successfully presented a patent titled "A System and Method for Multi-Spectral Image Fusion to Enhance Scene Understanding Using Adaptive Feature Extraction and Deep Learning."

Kaviarasi J, Assistant Professor in the Department of Artificial Intelligence and Data Science at St. Joseph's College of Engineering, has recently published a patent titled "Quantum Computing Algorithms for Solving Large-Scale Optimization Problems."

(12) PATENT APPLICATION PUBLICATION (21) Application No.202541080640 A

(19) INDIA

(22) Date of filing of Application :26/08/2025 (43) Publication Date : 05/09/2025

(54) Title of the invention : AI ENABLED IOT SMART SENSOR NETWORK FOR REAL-TIME AIR QUALITY MONITORING, EARLY POLLUTION DETECTION, AND SOURCE PREVENTION

(71)Name of Applicant :
1)Kushvanth Chowdary Nagabhyru
2)RVS Praveen
3)RaviTeja Aida
4)Srinikhil Saisatya Vemuri
5)Ananth Krishna Rambhatla
6)Dr. A. Pradeep
7)Dr Deepak Sundrani
8)Senthil Kumar D
9)Dr A. Kubendiran
10)Mudadla Asha
11)S Nagoorkani
12)Dr. Padmesh Medesety

(57) Abstract :
AI-Enabled IoT Smart Sensor Network for Real-Time Air Quality Monitoring, Early Pollution Detection, and Source Prevention is the proposed invention. The proposed invention focuses on understanding the functions of Early Pollution Detection. The invention focuses on analyzing the parameters of Smart Sensor Network for Real-Time Air Quality Monitoring and Source Prevention using algorithms of AI Approach.

No. of Pages : 12 No. of Claims : 5

The Patent Office Journal No. 36/2025 Dated 05/09/2025 86163

Mr. Senthil Kumar D, Assistant Professor in the Department of Artificial Intelligence and Data Science at St. Joseph's College of Engineering, has successfully published a patent titled "AI-Enabled IoT Smart Sensor Network for Real-Time Air Quality Monitoring, Early Pollution Detection, and Source Prevention."

(12) PATENT APPLICATION PUBLICATION (21) Application No.202541077899 A

(19) INDIA

(22) Date of filing of Application :15/08/2025 (43) Publication Date : 29/08/2025

(54) Title of the invention : MACHINE LEARNING AND IOT-BASED INTELLIGENT SYSTEM FOR DEFECT DETECTION AND QUALITY ASSURANCE IN SUPPLY CHAIN MANAGEMENT

(51) International classification :G06T0007000000, G06N0020000000, G06F0011360000, G16H0040200000, G01N0021359000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)Name of Applicant :
1)Dr. Deepthi Kuppuswamy
2)Abhishek Singh Gaharwar
3)Hari Krishna Vemuri
4)Kaushik V S
5)Dr. Hirendra Singh
6)K.Thangadurai
7)Usharee R
8)Senthil Kumar D
9)Dr Sumanth Koushik Sharma S
10)Chethana T V
11)Dr.T.Rajamary
12)S Abdul Ajees
Name of Applicant : NA
Address of Applicant : NA
(72)Name of Inventor :
1)Dr. Deepthi Kuppuswamy
2)Abhishek Singh Gaharwar
3)Hari Krishna Vemuri
4)Kaushik V S
5)Dr. Hirendra Singh
6)K.Thangadurai
7)Usharee R
8)Senthil Kumar D

Mr. Senthil Kumar D, Assistant Professor in the Department of Artificial Intelligence and Data

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/09/2025

(21) Application No.202541091373 A

(43) Publication Date : 24/10/2025

(54) Title of the invention : AI-DRIVEN CONSUMER BEHAVIOR PREDICTION ENGINE FOR ADAPTIVE DIGITAL MARKETING CAMPAIGNS

(51) International classification: G06Q0020024200, G06Q0030025100, G06Q0030020000, G06Q0030020190, G06Q0030020200

(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DR.KRISHNA KUMAR T.P
Address of Applicant :PROFESSOR & HEAD DEPARTMENT OF MASTER OF BUSINESS ADMINISTRATION, NEHRU SCHOOL OF MANAGEMENT, @ NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE, PAMPADY, THIRUVILLWAMALA, KERALA 680588 Kerala India
2)Dr. Trushna Vinod Kandalkar
3)Dr. Shobha Santosh Jagtap
4)Rajiv Kumar Nath
5)Kumari Deepika P
6)Dr. Rohini G
(72)**Name of Inventor :**
1)DR.KRISHNA KUMAR T.P
2)Dr. Trushna Vinod Kandalkar
3)Dr. Shobha Santosh Jagtap
4)Rajiv Kumar Nath
5)Kumari Deepika P
6)Dr. Rohini G

(57) Abstract :
Abstract The present invention discloses an AI driven consumer behavior prediction engine for adaptive digital marketing campaigns. The system collects consumer data from multiple heterogeneous sources including browsing history, purchase records, demographics, and social media interactions. A preprocessing and feature engineering module generates structured features which are analyzed by a hybrid prediction engine employing artificial intelligence models such as recurrent neural networks, transformerbased architectures, classification algorithms, and reinforcement learning. Based on predicted consumer intent, preferences, and conversion likelihood, an adaptive campaign management module autonomously modifies digital marketing parameters including advertisements, pricing strategies, promotional offers, and communication channels in real time. A feedback module monitors consumer responses and continuously updates the prediction engine to refine accuracy and prevent model drift. The invention enables real-time personalization, improved consumer engagement, optimized marketing expenditures, and compliance with data privacy standards, thereby representing a significant advancement over conventional static marketing systems
No. of Pages : 15 No. of Claims : 6

Science at St. Joseph's College of Engineering, has recently published a patent titled "Machine Learning and IoT-Based Intelligent System for Defect Detection and Quality Assurance in Supply Chain Management."

Ms. S. Kumari Deepika, along with co-inventors Dr. Krishna Kumar T.P, Dr. Trushna Vinod Kandalkar, Dr. Subsha Santosh Jagtap, Rajiv Kumar Nath, and Dr. Rohini G, has successfully published a patent titled "AI-Driven Consumer Behavior Prediction Engine for Adaptive Digital Marketing Campaigns."

DEPARTMENT OF ARTIFICAL INTELLIGENCE AND MACHINE LEARNING		
Sl. No.	**Photographs Captured During Event**	**Corresponding remarks in regarding the status of activity execution**
1.	**Dr. Adlin Sheeba** **Published Paper**  International Journal of Applied Mathematics Volume 38 No. 2s, 2025 ISSN: 1311-1728 (printed version); ISSN: 1314-8060 (on-line version) EEG-BASED MOTOR IMAGERY PREDICTION FOR STROKE REHABILITATION USING QUINE-MCCLUSKEY-LATENT ATTENTION NETWORK WITH DANDELION OPTIMIZER Dr K Muthulakshmi[1], Sandra Jestine[2], Kama Ramudu[3], Dr. D. Sharmila[4], Dr. Adlin Sheeba[5], Samson Isaac[6] [1]Professor, Department of Electronics and Communication Engineering, Sri Krishna College of Technology, Coimbatore, India Email: muthulakshmi.k@skct.edu.in https://orcid.org/0000-0002-4418-4388 [2]Assistant Professor, Mathematics, Dayananda Sagar College of Engineering, Bangalore sandra-maths@dayanandasagar.edu Orchid id: 0009-0006-2803-1974 [3]Associate Professor, Department of ECE, Aditya University, Surampalem, Kakinada, Andhra Pradesh Email: ramudukama@gmail.com Orchid id: 0006-0002-8385-0996 [4]Department of Mathematics, The Gandhigram Rural Institute- DTBU Mail. Id: banu6ci6@gmail.com Orchid id : 0000-0001-9999-8488 [5]Professor, Department of Artificial Intelligence and Machine Learning, St. Joseph's College of Engineering, OMR, Chennai adlinsheeba73@gmail.com https://orcid.org/0000-0002-7428-8575 [6]Division of Biomedical Engineering, Karunya Institute of Technology and Sciences, Coimbatore, Tamilnadu, India. Samsonisaac@karunya.edu. 0000-0001-9860-2816	**Title of the Paper** – EEG-Based Motor Imagery Prediction for Stroke Rehabilitation Using Quine-McCluskey-Latent Attention Network with Dandelion Optimizer" in the International Journal of Applied Mathematics Abstract: Stroke is a leading neurological disorder caused by the rupture or blockage of cerebral blood vessels, leading to brain cell damage and impaired motor functions. Electroencephalography (EEG) Motor Imagery (MI) Prediction utilizes EEG a non-invasive technique with high temporal resolution to record brain activity during imagined movements. By analysing these motor imagery signals, predictive models can assist in monitoring and enhancing motor recovery, making EEG a promising tool in stroke rehabilitation. To address the need for accurate and interpretable MI prediction, the study presented an EEG-based motor imagery prediction framework using a Quine-McCluskey-Latent Attention Network integrated with Dandelion Optimizer (QMc-LAN-DaO). Initially, raw EEG signals are acquired from Brain-Computer Interface Competition IV-2a (BCI Competition IV-2a) dataset, undergo pre-processing using the Cubature Kalman Filter (CKF) for noise reduction, and are then normalized within [8-24 Hz] frequency band to preserve motor-related rhythms essential for motor imagery analysis. For feature extraction, the Clifford Fourier Mellin Transform (CFMT) is employed to obtain robust, scale- and rotation-invariant spatiotemporal features essential for distinguishing motor intentions. Then prediction using Quine-McCluskey Latent Attention Network (QMc-LAN) combines the strengths of Quine-McCluskey Binary Classifier (QMcBC), known for its logical feature minimization, with the Latent Attention Network (LAN), which captures task-relevant hidden representations. This hybrid approach enhances prediction accuracy by efficiently selecting and focusing on the most discriminative EEG features for motor imagery prediction. To further optimize performance, the Dandelion Optimizer (DaO) fine-tunes the loss function by adaptively balancing feature noise and repeatability error. The

		proposed QM-LAN with DaO delivers high accuracy of 99.94% and interpretability, making it a valuable tool for MI-based stroke rehabilitation, neurofeedback, and BCI applications.
2.	**Dr. Raman. C.J** **Published Paper**  Intelligent fault detection in battery systems: a machine learning approach with transformer-enhanced multi-modal Sensing	**Title of the Paper :** Intelligent fault detection in battery systems: a machine learning approach with transformer-enhanced multi-modal Sensing **Abstract:** This study presents a new intelligent battery safety framework that improves fault detection and risk management from traditional static monitoring systems. The proposed method simultaneously used redundant multi-modal sensing of battery safety data with a Convolutional Autoencoder (CAE), followed by an anomaly classifier based on Transformer networks that captured spatial and temporal dependencies in sensing data for fault prediction. The proposed method introduces the use of Bayesian sensor fusion to correct the redundant measurements and fuzzy logic reasoning to convert anomaly scores into risk-based safety actions that support interpretable decision-making. The estimate of the State of Health (SoH) of the battery is derived from real-time fusion of thermal profiles, routing voltage, and cycle aging data, enabling fidelity in tracing degradation trends during faults. Experimental evidence of validity using MATLAB/Simulink and real-time hardware-in-the-loop fault injection indicates a 15 % reduction in false positives, fault detection accuracy up to 98 %, and reliable actuating capability within 20 ms. These results celebrate notable improvements over traditional single-modality, threshold systems, while providing robust, proactive safety for electric vehicles and grid storage applications. This research provides a definitive proof of concept for the CAE-Transformer-Fuzzy hybrid framework as an effective and implementable approach to adaptive battery management in dynamic and safety-critical situations.

3.	**Ms. Quba Jaslin .C** **Published Patent** 	**Title of Innovation:** Low Latency Routing Protocol for Mission Critical IoT Applications in Smart Cities
4.	**Ms. Deepa R** **IEEE Conference** 	**Title of the Paper :** CorneaNet: A Deep Learning Framework for Explainable and Early Detection of Keratoconus from Multimodal Corneal Tomography

<table>
<tr>
<td>5.</td>
<td>Ms. Quba Jaslin .C

IEEE Conference

  </td>
<td>Title of the Paper : PulmoAid: An Explainable Artificial Intelligence Chatbot for Lung Disease Diagnosis and Guidance</td>
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<td>6.</td>
<td>Certificates received by the Faculty
 
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<td><u>NPTEL Online Certification & NPTEL - AICTE FDP by the faculty</u>

<table>
<tr><th>S.No.</th><th>Name of the Course</th><th>Name of the Staff</th><th>Secured Grade</th><th>Duration</th></tr>
<tr><td>1.</td><td>C Programming and Assembly Language</td><td>Ms. Divya P</td><td>Elite</td><td>4 week</td></tr>
<tr><td>2.</td><td>Python for Data Science</td><td>Mr. Nirmalkumar V</td><td>Elite</td><td>4 week</td></tr>
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DEPARTMENT OF CHEMICAL ENGINEERING

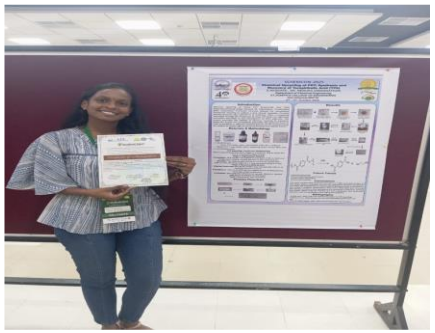
S.No.	Title of the Events and Photographs	Details of the Event
1.	**MEMORANDUM OF UNDERSTANDING (MOU)**	Memorandum of Understanding (MoU) with **Hubert Enviro Care Systems Ltd. (HECS),** Chennai, on October 7, 2025. The MoU aims to bridge the gap between academic learning and industrial practices, providing students with opportunities to enhance their technical and professional skills. The collaboration will facilitate a wide range of activities including **industrial visits, in-plant training, internships, guest lectures, workshops, placement support, and faculty development programs.** Memorandum of Understanding (MoU) with **MEINE Electric Automotives Pvt. Ltd., Chennai,** on October 14, 2025. This partnership aims to strengthen the link between academics and the electric mobility industry, opening new avenues for student learning and practical exposure. Through this collaboration, students will benefit from **industrial visits, internships, in-plant training, guest lectures, workshops, placement opportunities, and faculty development programs**.

		  HECS MEINE ELECTRIC
2.	**GUEST LECTURE**	Guest lecture on "**Exploring Career Opportunities in Chemical Engineering**" on October 7, 2025. The session was delivered **by Ms. Pravina Moses, Director of Hubert EnviroCare Systems Ltd. (HECS), Chennai. Ms. Pravina Moses** shared valuable insights into the diverse roles chemical engineers play across industries such as environmental management, process design, energy, and sustainable technologies. She highlighted the growing demand for chemical engineers in emerging areas like waste treatment, green energy, and pollution control. Guest lecture on "**Future in Batteries and Global Market Value" on October 14, 2025**. The session was delivered by **Mr. Priyansh Mohan, Co-founder and CEO of MEINE Electric Automotives Pvt. Ltd**., Chennai**. Mr. Priyansh Mohan** shared his expertise on the rapidly expanding battery technology sector and its crucial role in driving the global shift toward electric mobility and renewable energy.

		 
3.	**INDUSTRY VISIT FOR COLLABORATION**	**Dr. S. Sujatha, Assistant Professor**, met **Mr. PavanKumar, HR Manager** of **Ultramarine & Pigments Ltd.,** to discuss opportunities for placements, internships, and industrial visits. The meeting was part of the department's Industry–Institute Interaction Programme, aimed at strengthening collaboration between academia and industry.  
4.	**STUDENT ACHIEVEMENT**	**Mr. Kaviamuthan S of Batch 2022–2026** for securing a prestigious internship opportunity at the Indian Institute of Technology, Roorkee **(IIT Roorkee)**—one of the nation's premier institutions known for its excellence in engineering education and research. This internship, offered for a duration of two months with a stipend of **₹30,000,** provides **Mr. Kaviamuthan** an

		invaluable platform to explore advanced research and practical applications in the domain of Chemical Engineering. **Ms. Devika P.E of Batch 2022–2026** for being selected for a prestigious internship at the **Bhabha Atomic Research Centre (BARC),** Trombay, Mumbai — India's premier nuclear research organization known globally for its pioneering contributions in atomic energy and advanced scientific research. The internship, spanning a duration of four months, provides **Ms. Devika** with a remarkable opportunity to work under the guidance of eminent scientists and researchers at BARC.
5.	**COMPETITION ATTENDED BY THE STUDENTS**	Our students demonstrated exceptional technical expertise and innovation in poster presentations across multiple themes, bringing laurels to the institution, under the Nanotechnology, Petroleum/Petrochemical/Polymer, and Safety in Process Industry theme happened at **S-CHEMCON, organized by VIT Vellore**, the prestigious national-level chemical engineering conference organized under the banner of the **Indian Institute of Chemical Engineers (IIChE).** **Ms. S. Akshaya** secured **First Prize** for her poster titled "Polymer Engineering: Fundamentals, Design and Advancements in Sustainable Recycling". Additionally, **Mr. Rahul K, Mr. Subash G, and Mr. Balakrishnan B** earned **Third Prize** for their innovative work on "Synthesis of Magnetic Nanoparticles from Biomass for the Removal

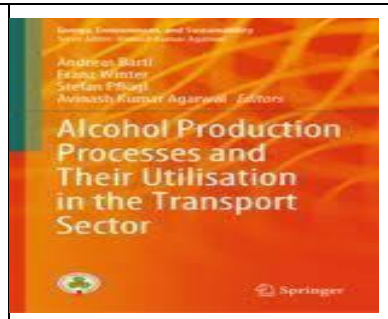
of Textile Dyes."



Mr. Nithish Kanna and Mr. Vishal, final-year students of the Department of Chemical Engineering, secured the **Second Prize** in the "Med Mystry" competition at a National Level Technical Symposium organized by **Kings Engineering College** on 10th October.

Mr. Aslin Jose S. A. and Mr. Hari, students of II Year Chemical Engineering from St.Joseph's College of Engineering, won the **Second Prize** in the Hackathon event organized as part of **World Food Day 2025** celebrations at **Kongu Engineering College, Perundurai**, Erode on 10th October 2025.

6.	**PUBLICATIONS(ONLY PUBLISHED) DETAILS**	**Dr. T. Amudha, Assistant Professor**, has coauthored a book chapter titled "**Toward Carbon–Neutral Methanol: Emerging Technologies, Key Challenges, and the Pathway to Net-Zero Emissions**", published by Springer in the book "**Alcohol Production Processes and Their Utilisation in the Transport Sector**." The chapter discusses innovative approaches toward achieving carbon neutrality through methanol production, addressing key technological advancements and sustainability pathways. The chapter was first published online on October 16, 2025. **Dr. N. Magesh, Assistant Professor**, has been listed as a co-inventor in a published Indian patent titled **"Quality-of-Service Aware Resource Allocation System for Wireless Sensor Networks in Critical Applications**" (Application No. 202541088372 A). **Ms. R. Lavanya, Assistant Professor**, has been listed as one of the inventors in the Indian Patent Application titled "**Implementation of E-Logistics in Supply Chain Management Operations India**" (Application No. 202541086433A). **Dr. S. Vinod Kumar, Associate Professor**, has been listed as a co-inventor in a patent titled "**Secure Data Transmission Protocol for IoT Devices Using Adaptive Spread Spectrum Techniques.**

		   
7.	**FDP/ CONFERENCE/ WORKSHOP (ATTENDED BY STAFF)**	**Dr. R. Sivaranjanee, Assistant Professor**, participated and presented a paper titled "**Integrated Real-Time Air Quality Monitoring and Emission Mitigation" under the theme Green Chemistry at SCHEMCON 2025**, organized by the **IIChE–VIT Student Chapter**, Vellore Institute of Technology (VIT), Vellore, on 3rd and 4th October 2025. The conference, themed "**Sustainable Development in Energy and Environment,"** served as a platform for researchers and academicians to share innovative ideas and advancements in sustainable chemical engineering practices.

Dr. N. Venkatesh, **Head of the Department**, successfully completed the AICTE Training and Learning (ATAL) Academy Faculty Development Program on "**Hydrogen Energy Systems for a Clean and Green Future**" held at Avanthi Institute of Engineering and Technology from 13th to 18th October 2025.

Dr. N. Venkatesh, Head of the Department, successfully completed the AICTE Training and Learning (ATAL) Academy Faculty Development Program on "**Sustainable Hydrogen Energy: Technology, Innovation, and Entrepreneurship" held at SRM Institute of Science and Technology, Tiruchirappalli**, from 22nd to 27th September 2025.

Dr. Sivarajanee R, Assistant Professor, successfully completed a one-week online Short-Term Course on "**Nanomaterials for a Sustainable Future"** organized by the Chennai Research Foundation from 22nd to 27th September 2025.

Dr. N. Venkatesh, Head of the Department, has successfully completed the NPTEL online certification course on "**Selection of Nanomaterials for**

		Energy Harvesting and Storage Application" offered by IIT Roorkee during July– August 2025. He secured an Elite grade with a consolidated score of 81%.  Elite NPTEL ONLINE CERTIFICATION (Funded by the MoE, Govt. of India) Skill India This certificate is awarded to VENKATESH N for successfully completing the course Selection of Nanomaterials for Energy Harvesting and Storage Application with a consolidated score of 81 % Online Assignments 24.17/25 | Proctored Exam 57/75 Total number of candidates certified in this course: 219 Prof. Kaushik Ghosh, Professor(Chemistry) Coordinator CEC Jul-Aug 2025 (4 week course) Prof. Ranjana Pathania, Professor (BSBE) Coordinator (NPTEL) Indian Institute of Technology Roorkee swayam Roll No: NPTEL25ME115S433207655 To verify the certificate No. of credits recommended: 1 or 2 **Dr. N. Magesh, Assistant Professor**, successfully completed a **six-day Online Faculty Development Programme on "Emerging Trends in Advanced Healthcare Devices"** organized by the Department of Biomedical Engineering, **Vel Tech Multi Tech Dr. Rangarajan Dr. Sakunthala Engineering College,** Chennai. The programme was conducted from 22nd to 27th September 2025.

		
8.	**NPTEL**	congratulates the **IV Year (2022–2026 Batch**) students for their remarkable performance in the NPTEL Certification Courses. Their consistent dedication and pursuit of academic excellence have earned them Silver and Elite certificates, showcasing their commitment to learning beyond the curriculum.The department applauds the following achievers for bringing laurels to the institution: **Kaviamudhan S (312322203016)** **Kavinraja Chakravarthy E (312322203017)** **Syed Ajmal Basha A (312322203037**)

Congratulates **the III Year (2023–2027 Batch)** students for their outstanding performance in the NP Certification Courses. Their exceptional dedication, perseverance, and academic enthusiasm earned them **Silver and Elite certificates**, bringing pride and recognition to the department.

Yoga Akshaya B (312323203051)

Varsha Mahi V A (312323203049)

Dhabasri P (312323203010)

Balakrishnan B (312323203008)

Vengat Raman S K (312323203050)

Hariprasath R (312323203012)

Kaviya R (312323203019)

		Kiruthika C (312323203020) Prakadesh S (312323203028) Rahul K (312323203031) Shalesh Priyan K S (312323203038) Susindhiran S (312323203046) Swason S (312323203047) 

DEPARTMENT OF CIVIL ENGINEERING

Sl. No.	Photographs Captured During Events (Briefs About the Photographs)	Corresponding remarks (Minimum 300 words) in regarding the status of activity execution stating
1.	**FDP/Workshop/Conference attended**	**10 Students from Final Year** has attended the **Workshop** titled **"Blueprint to Budget"** on 10.10.2025 conducted by Coimbatore Institute of Engineering and Technology in association with IIC.
2.	**Awards/Prize won by students**	• **Two Students** from Final Year has secured **Elite + Silver** in **NPTEL July/August 2025** Exams on 4 Weeks Course titled **"Introductory Field Structural Geology".** • **Fifteen Students** from Final Year has secured **Elite + Silver** in **NPTEL July/August 2025** Exams on 4 Weeks Course titled **"Introductory Field Structural Geology".**
3.	**Other activities (if any)**	• **Mrs.R.Ruthra** has secured **Elite + Silver** in **NPTEL July/August 2025** Exams on 4 Weeks Course titled **"Introductory Field Structural Geology".** • **Mrs.S.Banupriya** has secured **Elite** in **NPTEL July/August 2025** Exams on 4 Weeks Course titled **"Introductory Field Structural Geology".**

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Sl. No.	Event with Photo	Description
1	**Technical talk and Interaction**	**Date** : 24.10.2025 **Venue** : **Placement block** **Nature of Event** : Technical talk Participants : III & IV Year students Objective : • To present and explain technical concepts, tools, or innovations to enhance understanding. • To help participants gain practical insights and improve technical competencies. • To encourage discussions, idea exchange, and motivation for further exploration or implementation. Outcome : • Participants gain deeper knowledge of the discussed technology or concept. • Attendees learn real-world applications, best practices, and problem-solving approaches. • Facilitates connections and idea exchange among peers for future projects or innovations.
		

2	**Pre Placement Talk - "** Infosys**"**	

Date : 26.10.2025
Venue : Online
Nature of Event : Pre Placement Talk
Participants : IV Year students

Objective :

- To provide students with a comprehensive overview of a company, its culture, and its recruitment process, allowing them to make informed decisions about potential career paths.
- It also helps companies introduce themselves to a pool of potential candidates and build a positive image.

Outcome :

- Pre placement talks create opportunities for attendees to connect with alumni who may serve as valuable mentors, advisors, or contacts in their desired field.
- Building relationships with alumni can lead to internships, job opportunities, and professional connections that can benefit attendees throughout their careers.

DEPARTMENT OF MECHANICAL ENGINEERING

Sl No	Name of the Activity	Remarks
1		➢ Mr. J. Vijayanand, Assistant PRofessor, Department of Mechanical Engineering, has Successfully defended his thesis and awarded doctorial Degree under the supervision of Dr. Vaddi Seshagiri Rao, Principal, St. Joseph's College of Engineering, on 13/10/2025.
2	**Staff acheivements**	➢ Mr. G. Ashwin Prabhu, Assistant Professor, Department of Mechanical Engineering, have received a Reviewer Certificate from the journal Discover Materials (Springer) on 8th October 2025, in recognition of his contribution to the peer review process. ➢ Mr. G. Ashwin Prabhu, Assistant Professor in the Department of Mechanical Engineering, successfully completed the NPTEL course on Product Design and Development with a score of 79 percentile, earning an Elite Silver Certification in association with the Indian

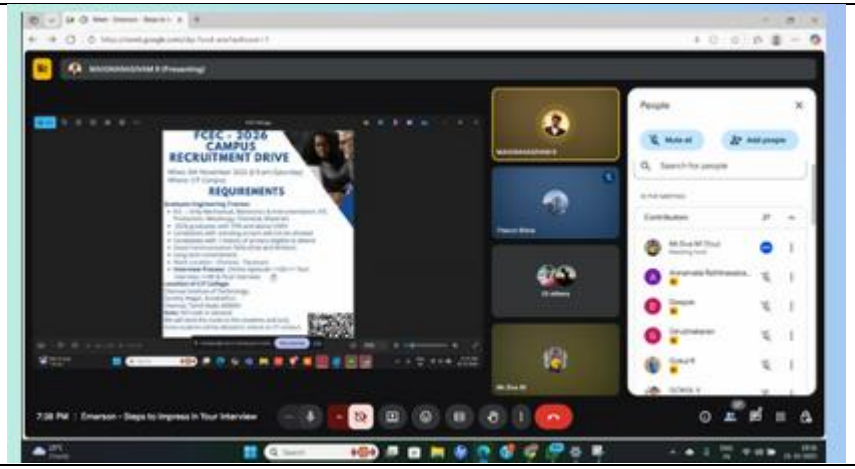
		Institute of Technology, Roorkee. ➢ Mr. G. Ashwin Prabhu, Assistant Professor in the Department of Mechanical Engineering, has exceptional record on mentoring students for the NPTEL course on "Product Design & Development" conducted by IIT Roorkee, - Total students: 61, Elite: 30, Elite Silver: 17, Successfully completed: 14 ➢ Mr.K. Gnanasekaran ,Assistant Professor from the department of mechanical engineering acted as a reviewer for the Journal of Brazilian society of mechanical science and engineering a SCIE & and Anna University Annexure 1 ,Q2 journal with an impact factor of 2.1 . ➢ Mr.K. Gnanasekaran ,Assistant Professor from the department of mechanical engineering have received a reviewer certificate for the journal of scientific report a SCIE & and Anna University Annexure 1 ,Q1 journal with an impact factor of 3.9 ➢ Mr.K. Gnanasekaran , Assistant Professor from The Department of Mechanical Engineering published a research article titled UNRAVELING THE STATISTICAL SIGNIFICANCE: IMPACT OF CALCIUM SILICATE ON MECHANICAL AND FRICTIONAL WEAR PROPERTIES OF AA7075

		HYBRID COMPOSITES in surface reviews and letters a SCIE & Anna University Annexure 1 ,Q2 Journal with an impact factor of 2 Mr.K. Gnanasekaran ,Assistant Professor from The Department of Mechanical Engineering published a research article titled Activated bamboo biochar-infused soy wax PCM: A green composite with enhanced thermal conductivity for thermal energy storage applications in Material letters a SCIE & Anna University Annexure 1 ,Q2 Journal with an impact factor of 2.7 Mr.K. Gnanasekaran ,Assistant Professor from The Department of Mechanical Engineering published a research article titled Comprehensive performance analysis of a flat plate solar water heating system featuring a dual-inlet modified absorber in Discover Sustainability a ESCI ,Q2 Journal with an impact factor of 3.79 Mr.K.Gnanasekaran from the department of mechanical engineering has successfully completed the NPTEL Online certification course on Product Design and Development (JULY-AUGUST 2025) offered by IIT .He Secured ELITE SILVER Certificate . Mr. G. Ashwin Prabhu, Assistant Professor, Department of Mechanical Engineering, have received a Reviewer Certificate from the "Journal of Polymer & Composite", a Web of Science

		(ESCI) Indexed Journal on 28th October 2025, in recognition of his contribution to the peer review process ➢ Mr.K. Gnanasekaran ,Assistant Professor from the department of mechanical engineering acted as a reviewer for the Journal of Brazilian society of mechanical science and engineering a SCIE & and Anna University Annexure 1 ,Q2 journal with an impact factor of 2.1 . Mr.K. Gnanasekaran ,Assistant Professor from the department of mechanical engineering have received a reviewer certificate for the journal of scientific report a SCIE & and Anna University Annexure 1 ,Q1 journal with an impact factor of 3.9. Dr.Sathish Rengarajan,Professor,Department of Mechanical Engineering, published a study in 2025 titled “Synthesis, characterization and coating studies of poly (5-indanyl methacrylate) - methyl methacrylate polymer on pulsed fiber laser arc welded 316L steel” in the International Journal of Vehicle Structures & Systems, vol. 17, no. 2, pp. 345–349. Dr.Sathish Rengarajan,Professor,Department of Mechanical Engineering, published a study in 2025 titled “Consequences of Modification in Interface Angles of the Plates in Friction Stir Welding of Different Aluminium

		Alloys" in the International Journal of Vehicle Structures & Systems, vol. 17, no. 3, pp. 544– 548. Mr. J. Mariyappan, Assistant Professor, Department of Mechanical Engineering, Cleared NPTEL on a score of 68 Percentile with Elite Certification in Power Plant Engineering in association with Indian Institute of Technology, Roorke
3		➢ Mr. N. Sathishkumar, Assistant Professor, Department of Mechanical Engineering has been invited and joined as a " Member of the Advisory Panel" of the Engineering research Ecpress(ERX) journal, published by IOP Publishing (UK

5		➢ The Department of Mechanical Engineering, St. Joseph's College of Engineering, organized an Outreach Program on "3D Printing Technology" at Sri Sitaram Vidyalaya Matriculation Higher Secondary School, West Mambalam, on 17th October 2025. The session aimed to introduce the fundamentals and practical applications of 3D printing technology to +1 and +2 students, fostering curiosity and awareness about emerging trends in engineering and manufacturing. The outreach program provided students with insights into design, prototyping, and the real-world impact of additive manufacturing. The event was successfully coordinated by Dr. K. Arun, Mr. K. M. B. Karthikeyan, Mr. G. Ashwin Prabhu, Mr. M. Siva, and Mr. N. Sathishkumar, who engaged the school students through interactive demonstrations and discussions, inspiring them to explore the exciting possibilities of modern engineering technologies
	Alumni Interaction:	The Department of Mechanical Engineering organized an insightful session titled "Emerson – Steps to Impress in Your Interview" on 21st October 2025. The session was delivered by Mr. Meignanasivam, a Software Engineer from Emerson Company, who shared his valuable insights and experiences on how to perform effectively in interviews. This event aimed to

		guide students in enhancing their interview skills, improving their self-presentation, and building confidence for placement opportunities. Mr. Meignanasivam discussed key aspects such as resume building, communication techniques, body language, and the importance of technical knowledge and problem-solving skills. He also highlighted the role of professionalism, ethics, and continuous learning in shaping a successful engineering career.
	IEI STUDENT CHAPTER DESIGN EVENT	IEI STUDENT CHAPTER DESIGN EVENT

- On 08/10/2025, The Department of Mechanical Engineering, in association with the IEI Students' Chapter, conducted a Part Modelling Design Event on 8th September 2025. The winners of the event received cash prizes and certificates.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Events conducted:

The following events have been conducted during October 2025 at College Level

1. 5G Teck Talk	**Report**
a) Activity 1	
	A 2-day technical talk was organized for our 5G PEP students with industry experts from Nokia Solutions, Chennai on 9th & 10th October 2025. The sessions provided an in-depth overview of recent developments in 5G Advanced technologies. Students gained insights into the evolution of 5G networks and key enhancements in performance, latency, and connectivity. The experts also discussed challenges and solutions in implementing 5G in real-world scenarios. A special focus was given to emerging trends and research directions towards 6G. Interactive discussions allowed students to clarify doubts and explore practical applications of advanced 5G concepts. Hands-on examples and case studies highlighted the impact of 5G on industries and smart technologies. Students were exposed to future opportunities in wireless communication and research. The talk bridged the gap between academic learning and industry expectations in 5G and 6G technologies.Overall, the sessions enhanced the technical knowledge and readiness of students for next-generation networks.

	
2. NEXTGEN VLSI CONCLAVE ’25	**Report**
a) Activity 1	

The NEXTGEN VLSI Conclave '25, organized under the Placement Empowerment Program by the Semiconductor and VLSI Design Centre of St. Joseph's Group of Institutions, OMR, Chennai – 119, was successfully held on 10th October 2025 at Periwinkle Hall. The event served as an inspiring platform that brought together students, academicians, and industry professionals to discuss the latest advancements and future directions in the VLSI and semiconductor sectors.

The conclave was honored by the presence of Ms. Dipti Maheshwari, Tech Staff at Microchip Technologies, who graced the occasion as the Chief Guest. She delivered an insightful and motivating address highlighting the immense growth potential and emerging opportunities in the semiconductor industry.

A thought-provoking panel discussion on the theme "VLSI to Valley: Building India's Semiconductor Ecosystem" was one of the highlights of the day. The panel featured distinguished experts from leading organizations including Microsoft, Intel, Cadence, EINFOCHIP, InCore Semiconductors, and Nvidia. Esteemed panelists — Mr. Shaik Aleem Ur Rehaman, Mr. T. A. Bharathwaj, Mr. Prasanna Venkatesan Kesavan, Mr. Arjun Menon, Ms. Bindhu Ganesh, Mr. Asadur Rehaman, and Mr. Rangarajan Srinivasan — shared their valuable perspectives on India's rapidly evolving semiconductor landscape.

The discussion explored diverse topics such as the nation's semiconductor roadmap, advancements in ASIC and SoC design, the role of EDA tools and automation, challenges in verification and validation, and the growing importance of academia–industry collaboration.

Overall, the conclave proved to be an enriching experience, fostering meaningful knowledge exchange, industry exposure, and inspiration for aspiring engineers eager to be part of India's silicon revolution.

	
3. ALUMNI ACTIVITIES	**Report**
a) Activity 1	

4. Memorandum of Understanding

Report

The Department of Electronics and Communication Engineering organized an Alumni Talk on "Career Journey and Insights into Infosys" on 26 October 2025, featuring Ms. Rashika R. S. Sherin, an alumna of the 2020–2024 batch and Associate Consultant at Infosys Limited, Mysore. The session provided valuable insights into the Infosys recruitment process, including the online test, technical, and HR interviews. Ms. Rashika shared her inspiring career journey, discussed Infosys' training program at Mysore, and highlighted the importance of continuous learning and skill enhancement. She emphasized the need for strong communication, coding, and problem-solving skills for career success. Students gained a clear understanding of industry expectations and appreciated the practical tips shared by the alumna. The session motivated participants to focus on self-improvement and professional growth. Overall, the talk served as an engaging platform connecting academics with real-world experiences.

a) Activity 1

A Memorandum of Understanding (MoU) was signed on 7th October 2025 between Entrepreneurship Development and Innovation Institute, Tamil Nadu (EDII-TN) and St. Joseph's College of Engineering to strengthen innovation and entrepreneurship initiatives among students. The ceremony was graced by R. Ambalavanan, Director of EDII-TN, and S. Prem Kumar, Assistant Director of EDII-TN, as Chief Guests. The collaboration aims to promote startup culture, capacity-building programs, and industry-linked innovation activities on campus. As part of their visit, the dignitaries also visited SPRINTATHON 25, where they interacted enthusiastically with student competition teams. Their interaction motivated participants to pursue innovative solutions and entrepreneurial ventures. This partnership marks a significant step towards fostering an innovation-driven academic ecosystem.

	 
5. Sprintathon	**Report**

a) Activity 1	
	SPRINTATHON'25, a National Level Innovation Hackathon organized by the Department of Electronics and Communication Engineering, St. Joseph's College of Engineering, in association with Data Patterns (India) Limited, was held on October 7th and 8th, 2025. The event served as an innovation-driven platform for students from various colleges and departments to showcase their creativity, technical expertise, and problem-solving abilities. With an impressive 3000+ team registrations nationwide from renowned institutions, the hackathon witnessed overwhelming participation and enthusiasm. After a rigorous selection process, 100 top-performing teams from institutions such as IITs, NITs, IIITs and other renowned institutions were shortlisted to compete in the final round conducted on campus. Participants developed innovative solutions across eleven diverse domains, including Defence and Aerospace, Wireless Networks and IoT, Renewable Energy, Health Monitoring, Waste Management, Smart Farming, Smart Education, Cybersecurity, AR & VR, Edge Computing, and Student Innovation. A total cash prize of ₹1,45,000 was awarded to the most outstanding participants, recognizing their innovation, teamwork, and technical excellence. Beyond competition, SPRINTATHON'25 emphasized experiential learning

	beyond the classroom, promoting leadership, creativity, and collaborative growth among participants. All active participants received certificates of participation, appreciating their dedication and contribution. The event successfully boosted student confidence, encouraged innovation and teamwork, and reaffirmed St. Joseph's College of Engineering's commitment to cultivating future-ready engineers and changemakers. 

6) Publications

Journal Publications

1) Natarajan Meenakshisundaram, Manimaraboopathy Maruthu Pandian, Arulraj Simon Prabu, Balaji Sambandam Ramachandran, Vasudhevan Veeraragavan, Patan Saleem Akram, Ahmed Ali Zahran," High speed data rate multi ultra-low loss core pure silica fibers with maximum potential capacity based on high Raman amplifier bandwidth", Journal of Optical CommunicationsJournal of Optical Communications.

2) Sajiv George, Kumutha Ragupathi, Chandramohan Kanmani Pappa, Arulraj Simon Prabu, Monisha Ravichandran, Patan Saleem Akram, Saber Ali Mahmoud," High optical fiber system capacity product based on various light sources with the employment of all optical fiber amplifiers through space division multiplexing systems", Journal of Optical CommunicationsJournal of Optical Communications.

3) P, Josephin Shermila, Anu Disney D, Reeda Lenus C, and Niruban R," Efficiency and Reliability: Optimization of Energy Management in Electric Vehicles Apply Monarch Butterfly Algorithm and Fuzzy Logic Control," Eksploatacja i Niezawodność – Maintenance and Reliability".

4) T Sowmya Keerthi, S Shanmugan, Afam Uzorka, A Nagendrababu, AE Kabeel, ZM Omara, A Simon Prabu, K Koteswara Rao, MC Rao, GR Subhashree, Faisal Mahroogi, Karthik Kannan, P Selvaraju, Arunkumar Jayakumar," Evaluating Environmental Implications of Dragon Fruit-In-fused TiO2 Coating in Solar Distillation", Case Studies in Thermal Engineering.

5) Ganesh Babu R, Geetha T S, Ramachandra Reddy K & Kavin Kumar K," Machine learning for river water quality monitoring: assessing seasonal and agricultural influences", Environmental Earth Sciences, Volume 84, article number 626, Oct 2025.

6) Prabu, Ramachandran Thandaiah, Perumalsamy, Sasireka, Murthy, Garapati Satyanarayana, Balamurugan, Alagar Manavalan, Kumar, Chandran Ramesh, Meenakshisundaram, Natarajan and Anwer, Karem Tarek," Simulative performance evaluation of high speed long distance soliton propagation data transmission system based on dispersion control in optical fiber system", Journal of Optical Communications, Oct 2025

7) Rayavarapu Sridivya, Behara Venkata Nandakishore, Dr Ved Srinivas, Dr. R. Niruban, Rajesh Tulasi, Amit Verma," Machine Learning-Driven Improvements In Software Delivery Pipelines", Journal of Theoretical and Applied Information Technology.

8) S. Poorani, P. Josephin Shermila, R. Niruban and T. Maris Murugan," A multi-faceted strategy for scalable, efficient, and grid-integrated electric vehicle systems using solid-state batteries and AI technologies", Sustainable Energy, Grids and Networks.

9) Ramalingam, Avudaiammal, Benita Jael J, Feslin Sherina S and Sam V George," HERITAGE WATCH AI: Design and development of PreserveNet for Structural Health defect identification", IEEE International Conference on Communication, Computing, Smart Materials and Devices (ICCCSMD) (Aug 2025)

10) Rajesh David, Dinesh Kumar Arivalagan, A Simon Prabu, S Ravi, Pallavi Giri, Ahmad Abdelhafiz Ali Samhan," Optimizing Cloud Computing Efficiency for Scalable and Adaptive Resource Management via AI and Machine Learning", 2025 Global Conference in Emerging Technology (GINOTECH), August 2025

11) M. Sathish,M. Shafiya Banu,Kannan Shanmugam, P. Thenmozhi,C. Srinivasan,Sermakani A M, “Deep Belief Networks for Brain Tumor Recurrence and Survival Rate Prediction”, 2024 International Conference on Smart Technologies for Sustainable Development Goals (ICSTS), IEEE.

12) Dr. J. Martin Leo Manickam, Professor, Department of ECE attended and presented a research paper titled Attention-Enhanced ResNet for accurate Alzheimer's disease classification at Dubai - International Conference on Artificial Intelligence, Metaverse and Cyber security organized by Rochester Institute of Technology (QS rank# 951), Sakarya University (Public university), and Higher College of Technology (Public University) during 17-18, October 2025. Conference witnessed participants from 17 countries. Keynote sessions were handled by Ms. Gina Petersen, Senior vice president, Country Manager - UAE & Oman at Mastercard & Dr. Eman El Sheikh Associate vice president University of West Florida, USA.

Online Course -NPTEL

13) Mr. VIGNESH G D, Assistant Professor, Department of ECE, has successfully completed the NPTEL online certification course on "Basics of Software Defined Radios and Practical Applications" conducted during July-August 2025, achieving an Elite with silver and Topper certification.

14) Dr. MARTIN LEO MANICKAM J, Professor, Department of ECE, has successfully completed the NPTEL online certification course on "Basics of Software Defined Radios and Practical Applications" conducted during July-August 2025, achieving an Elite certification.

15) Dr. AVUDAIAMMAL R, Professor, Department of ECE, has successfully completed the NPTEL online certification course on "Basics of Software Defined Radios and Practical Applications" conducted during July-August 2025, achieving an Elite certification.

16) Dr. LATHA P, Associate Professor, Department of ECE, has successfully completed the NPTEL online certification course on "Hardware Modeling using Verilog" conducted during July-September 2025, achieving an Elite certification.

17) Dr. JAYANTHI E has successfully completed the NPTEL online certification course on "Python for Data Science" conducted during July-August 2025.

18) Dr. K. RAMACHANDRA REDDY has successfully completed the NPTEL online certification course on "Principles of Modern CDMA/ MIMO/ OFDM Wireless Communications" conducted during July-September 2025, achieving an Elite with silver certification.

19) Dr. SURESH M has successfully completed the NPTEL online certification course on "Robotics" conducted during July-September 2025.

20) Dr. K. RAMACHANDRA REDDY has successfully completed the NPTEL online certification course on "System Design Through Verilog" conducted during July-September 2025, achieving an Elite with silver certification.

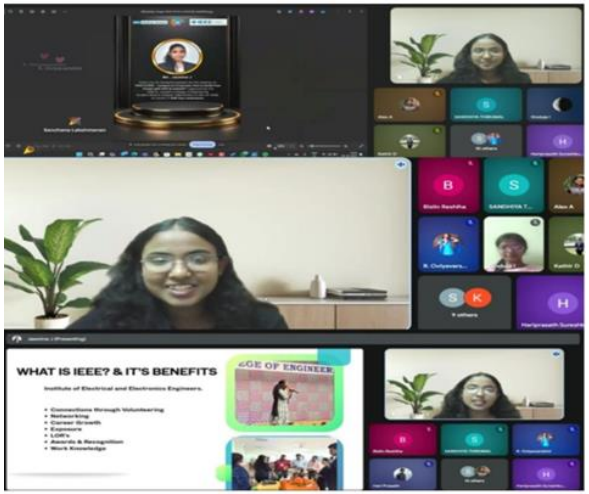
21) . G D VIGNESH, Assistant Professor, Department of ECE, has served as Session Chair for the International Conference on Emerging Technologies in Electronics and Green Energy (ICETEG 2025) held at JSS Science and Technology University, Mysuru, during 10th and 11th October, 2025.

7) Outreach Program

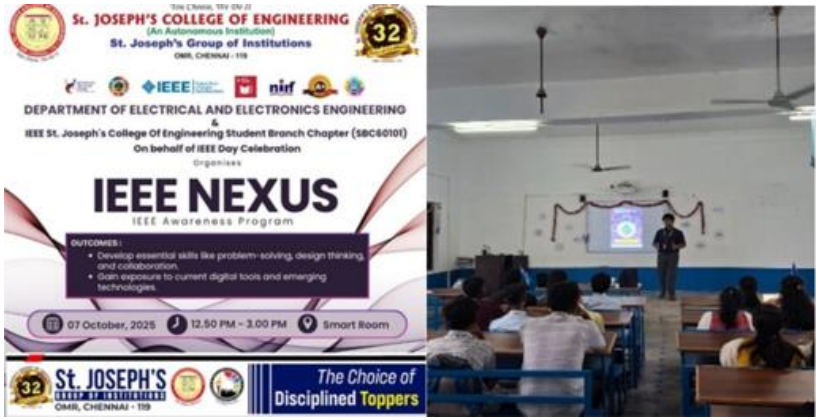
Dr. LATHA P, Associate Professor, Department of ECE, Semiconductor and VLSI Design Centre, under the Placement Empowerment Program, participated in the Design and Verification Conference (DVCon 2025) held at Radisson Blu, Bangalore, on 10–11 September 2025. They interacted with industry experts from IBM, Qualcomm, Intel, Synopsys, and NXP, gaining valuable insights into the latest semiconductor and EDA trends. The event provided exposure to innovative technologies and discussions with professionals from Google, Siemens, Cadence, Sandisk, and Paradigm Works. Participants also learned about industry hiring expectations and emerging opportunities in chip design and verification. The conference enhanced academic–industry collaboration and inspired participants to align their research with real-world VLSI advancements.

The Department of Electronics and Communication Engineering takes pride in the active participation of our esteemed faculty members — Dr. B Victoria Jancee, Dr. P.Elaveni, and Dr. M. Suresh — who were invited as special invitees and judges for the Science Day Celebration “ScienZor 2025”, organized by St. John’s Matriculation Higher Secondary School, New Perungalathur, Chennai. The event aimed to encourage scientific curiosity and innovation among school students. Our faculty members evaluated a wide range of innovative projects covering Life Sciences, Microcontroller-based systems, IoT Applications, Smart Farming, and Robotics. The event fostered a spirit of research and interdisciplinary learning among young innovators. It also strengthened academic collaboration between institutions through shared knowledge and mentorship. Notably, students from St. John’s Group of Institutions had earlier participated in a project competition organized by St. Joseph’s College of Engineering in July 2025. Their innovative project performance earned them a cash prize, showcasing their talent and consistency in science and technology competitions. Overall, the participation of our faculty members greatly contributed to promoting scientific temperament and nurturing the next generation of innovators.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Sl. No.	Photographs Captured During Events	Corresponding remarks (Minimum 300 words)
1.	**IEEE activities**  ***PIC: EVENT POSTER & PHOTO***	The resource person, **Ms. Jasmine J, EEE alumna (Batch 2021–2025), Business Development Executive at IRIM, Content Strategist at EFQi Solutions, and Execom Member – IEEE PELS Madras Section,** delivered an engaging talk on leveraging IEEE involvement and LinkedIn networking for professional growth. Ms. Jasmine emphasized the significance of cultivating a strong online presence, networking with professionals, and actively engaging in IEEE initiatives to enhance technical and leadership skills. She shared practical insights on how students can utilize LinkedIn to connect with recruiters, showcase their achievements, and align their profiles with industry expectations.

2.	**IEEE activities**  ***PIC: EVENT POSTER & PHOTO***	The distinguished speaker, Ms. Shamrutha J A, Associate Technical Consultant at WNS Vuram, Immediate Past Secretary of IEEE SJCE SBC, and proud alumna of St. Joseph's College of Engineering, delivered an inspiring talk on the pivotal role of IEEE in transforming students into global professionals. Ms. Shamrutha highlighted how IEEE offers unparalleled platforms for leadership, technical development, and professional networking. She shared her personal journey of growth through IEEE—from leading impactful initiatives to gaining international exposure—and emphasized the importance of leveraging IEEE resources for innovation, mentorship, and career advancement. Her session inspired students to take confident steps toward building strong professional networks and developing future-ready skills.
3.	**IEEE activities**	The session featured insightful discussions on IEEE's professional societies, technical activities, and innovation-driven initiatives. It encouraged students to explore IEEE's contribution to advancing technology for humanity and highlighted the value of collaboration, networking, and continuous learning within the IEEE community. More

	 ***PIC: EVENT POSTER***	than 40 students from the Department of Electrical and Electronics Engineering actively participated in the program, showing great enthusiasm and curiosity about IEEE's activities and opportunities. Participants gained valuable insights into how IEEE membership can enhance their technical knowledge, leadership skills, and career development through conferences, publications, and global events.
4.	**IEEE activities**	The event aimed to enhance students' knowledge of IEEE and strengthen their understanding of core electrical and electronics concepts. Designed as a fun and competitive quiz session, it encouraged participants to think critically, apply theoretical knowledge, and demonstrate teamwork and quick decision-making skills. The competition comprised multiple rounds that tested participants' awareness of IEEE activities, electrical fundamentals, and problem-solving abilities. The interactive nature of the event fostered enthusiasm and active engagement among students, promoting learning through collaboration and intellectual challenge.

	 ***PIC: EVENT POSTER***	Students also gained insights into the various opportunities offered by IEEE, including access to global resources, technical communities, and professional development platforms. The session helped bridge the gap between classroom learning and real-world applications, motivating students to stay curious and innovative.More than 40 students from the Department of Electrical and Electronics Engineering took part in the event, making it both educational and enjoyable.

5.	**IEEE activities**  ***PIC: EVENT POSTER & PHOTO***	The event was designed to inspire students to embrace innovation and creativity in engineering applications. It emphasized the importance of developing innovative thinking, problem-solving skills, and teamwork to address real-world engineering challenges. Through engaging sessions and discussions, participants explored how innovative approaches can be applied in design projects, research, and technological advancements. The session highlighted how IEEE provides a strong platform for students to showcase their creative ideas, collaborate with peers, and transform concepts into impactful solutions. More than 10 students from the Department of Electrical and Electronics Engineering actively participated in the event, gaining confidence to bring forward new ideas and learning the significance of exchanging knowledge through teamwork and collaboration.
6.	**IEEE activities**	The session, themed "Leveraging AI Technology for a Better Tomorrow," was delivered by **Mr. Arisudan T H, Alumnus of EEE (2020–2024) and Immediate Past Chairperson of IEEE SJCE SIGHT AG.** This insightful session focused on how Artificial Intelligence (AI) can be harnessed to build a sustainable and inclusive future by empowering smarter solutions in energy usage, healthcare, and environmental protection. Mr. Arisudan emphasized how AI enhances

	 ***PIC: EVENT POSTER***	human potential by augmenting learning, innovation, and accessibility, thereby creating equal opportunities for all. The event served as an enriching platform for students and professionals to explore the transformative role of AI in driving positive societal impact, fostering innovation, and shaping a better tomorrow.
7.	**BIS Club activities**	BIS Standards Club of the Department of Electrical and Electronics Engineering, St. Joseph's College of Engineering, Chennai, celebrated World Standards Day on 7th and 8th October 2025. As part of the celebrations, three events — Technical Quiz, Standards Writing, and Presentation on Indian Standards — were conducted to engage the members of the Standards Club and enhance their understanding of standardization practices.

PIC: EVENT POSTER

Dr. Jamna A, Assistant Professor, Mentor – Standards Club, addressed the participants and highlighted the importance of standards in promoting innovation, quality, and uniformity. They also emphasized the pivotal role of the Bureau of Indian Standards (BIS) in ensuring quality, safety, and sustainability across various sectors. Online certificates and prize amounts, were distributed to the winners of all three events.

The celebration concluded with an appreciation of the active participation of students and acknowledgment of BIS for its continued support and encouragement.

8.	**IGEN Club activities**  ***PIC: EVENT PHOTO***	St. Joseph's Group of Institutions, in collaboration with the Institution of Green Engineers (IGEN), inaugurated the IGEN Green Sustainability Academic Partner Program on 9th October 2025.The event was graced by eminent guests: Dr. Niladri Chakraborthy, Jadavpur University, Kolkata. Dr.Debrupa Chakraborty, Netaji Nagar College, Kolkata. Dr. Ramesh L, President, IGEN Professor,Dr. Suresh Seetharaman, Director, IGEN .The program aims to promote sustainability, green innovation, and environmental responsibility in academia. The guests shared insights on the importance of sustainable development and encouraged academic collaboration in green initiatives.
9.	**ALUMNI MEET**	St. Joseph's Legacy Fest – 2025 was grandly organized at Bengaluru on October 11, 2025 from 10:00 a.m. to 3:00 p.m. as a Regional Alumni Reunion. The event, themed "Rekindling the Spirit, Continuing the Legacy," brought together alumni from various batches to celebrate their enduring bond with the institution. Our beloved Chairman, Dr. Babu Manoharan, along with faculty members, warmly interacted with the alumni, sharing memories and institutional milestones. The gathering served as a vibrant platform for networking and reminiscing college days. Enthusiastic cultural performances and engaging discussions added color and warmth to the celebration. The event also witnessed the **announcement of the Alumni Association Office Bearers**

	 ***PIC: EVENT POSTER***	**of the Bengaluru Chapter**. The event concluded with heartfelt gratitude, reinforcing the spirit of togetherness and continuing the St. Joseph's legacy.

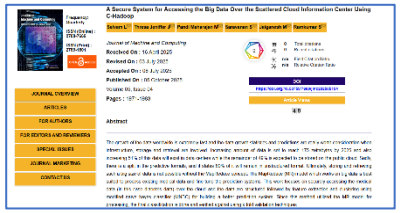
10.	**ALUMNI INTERACTION**  ***PIC: EVENT PHOTO***	An Alumni Career Empowerment Program on **"Designing Your Future with AI"** was organized on October 24, 2025. The session was exclusively conducted for first-year students. **Ms. Sarannya Dayanandan, EEE alumna (2015–2019) and Lead Engineer at Bosch Global Software Technologies**, shared valuable insights on career opportunities in Artificial Intelligence. The session motivated students to explore emerging technologies and plan their professional growth effectively.
11.	**E CELL ACTIVITIES**	Conclave was organized as a panel discussion on "Entrepreneurship as a Catalyst for Viksit Bharat 2047." The session featured four speakers who shared insights on innovation, leadership, and the role of startups in national growth. The discussion also highlighted the significance of women entrepreneurship and the need for greater inclusivity in business. The event encouraged participants to think creatively and contribute to India's entrepreneurial future, fostering awareness about the power of ideas and collaboration in nation-building. Enhanced understanding of entrepreneurship's impact on national development. Encouraged innovative and solution-oriented thinking among students Improved

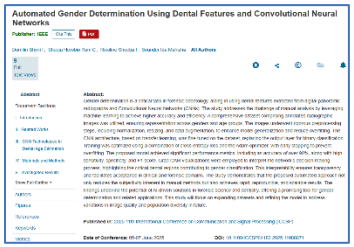
		awareness of opportunities and challenges in the entrepreneurial ecosystem
12.	**E CELL ACTIVITIES**	The Entrepreneurship Workshop aimed to build awareness about startups, innovation, and business models. The session featured interactive discussions, a BMC activity, and a quiz to test entrepreneurial knowledge. Participants actively engaged in sharing ideas and exploring creative business solutions. The event encouraged collaboration and practical learning, helping students connect theoretical concepts with real-world applications. Improved understanding of startup frameworks and innovation Enhanced teamwork and analytical thinking. Greater interest in entrepreneurship and financial planning

		
13.	**Faculty recognition and patent**	Our faculty **Dr. S.Sridharan** has been Published two patent 1.“Smart agriculture pest detection and control system with IoT based Remote access and data analysis” and “Sewage water level detector with mobile notification” on 24/10/2025 Our faculty **Dr.Jamna A** published one patent in the title “Optimization Of Electric Vehicle Charging With Supercapacitor Integration And Advanced Battery Management Systems” on 16/10/2025. Our faculty **Jeyaprakash N** has been published two patent 1. Machine Learning-Enabled System For Monitoring Faculty Behaviour And Optimizing Teaching Effectiveness In Higher Education. 2. Integrative Ayurvedic Management of Chronic Kidney Disease Using Panchakarma and Ml-Based Predictive Analytics on17/10/2025

14.	PLACEMENT DETAILS FOR THE MONTH OF OCTOBER 2025	**2022-2026 Batch** No of students placed = 17 Students Total No of Offers = 21 Offers Total No of Students (UG) = 171 Total No of Students Sports Causals (UG) = 01 Total No of Eligible Students (UG) = 141 (All Clear) % of students Placed (UG) = 17/170 = 10% No of students having single offers = 17 No of students having Double offers = 4 No of students having Triple offers = NIL

DEPARTMENT OF INFORMATION TECHNOLOGY

	Photographs Captured During Event/Screenshot	Corresponding remarks in regarding the status of activity execution
1.	 **Co-Author** **Dr. Thresa Jeniffer J,** published a paper indexed in	**Staff Publication** Selvam L, **Thresa Jeniffer J**, Pandi Maharajan M, Saravanan S, Jaiganesh M, Ramkumar S, " A Secure System for Accessing the Big Data Over the Scattered Cloud Information Center Using C-Hadoop ", Journal of Machine and Computing, ISSN (Online) : 2788-7669, ISSN (Print) : 2789-1801, Volume 05, Issue 04, Pages : 1971-1983, https://doi.org/10.53759/7669/jmc202505154. **(Indexed in Scopus)** **Abstract:** The growth of the data worldwide is extremely fast and the data growth statistics and predictions are really worth consideration when infrastructure, storage and retrieval are involved. Increasing amount of data is set to reach 175 zettabytes by 2025 and also increasing 51% of this data will exist in data centers while the remainder of 49% is expected to be stored on the public cloud. Sadly, there is a split in the predictive formats, and it states 80% of it will remain in unstructured format. Ultimately, storing and retrieving such a big size of data is not possible without the MapReduce concept. This work focuses on securely accessing the medical data (in this case diabetes data) over the cloud and the data are structured followed by feature extraction and clustering using modified naïve bayes classifier (MNBC) for building a better prediction system. Since this method utilized the MR model for processing, the final classification is done and verified against using k-fold validation techniques.
2.		**Staff Conference Publication**



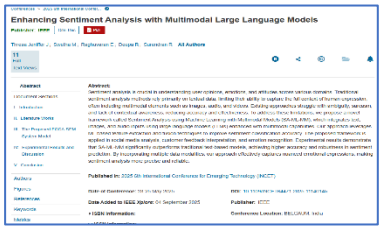
Authors

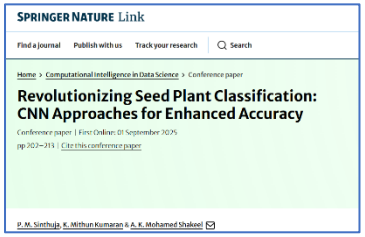
Mrs. Domilin Shyni I,
Published a paper in Scopus indexed Conference

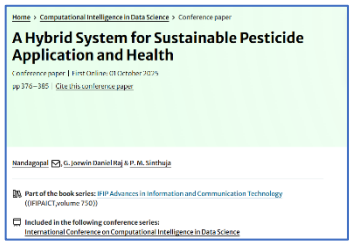
"**Domilin Shyni I**; Sheeja Herobin Rani C; Rexiline Sheeba I; Sounder Ida Mahizha" Automated Gender Determination Using Dental Features and Convolutional Neural Networks," 2025 11th International Conference on Communication and Signal Processing (ICCSP), Melmaruvathur, India, 2025, pp. 937-942, doi: 10.1109/ICCSP64183.2025.11088671. **(Indexed in Scopus)**

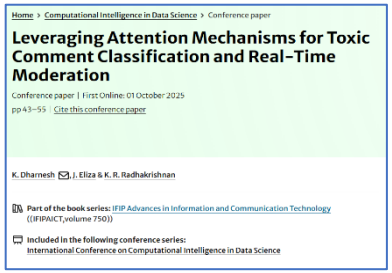
Abstract:

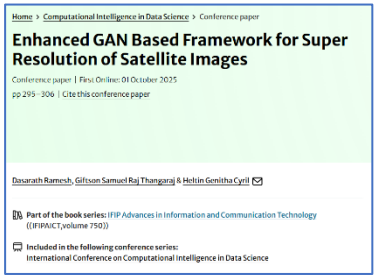
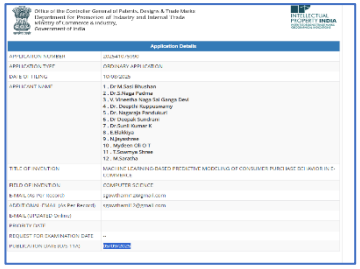
Gender determination is a critical task in forensic odontology, aiding in using dental features extracted from digital panoramic radiographs and Convolutional Neural Networks (CNNs). The study addresses the challenge of manual analysis by leveraging machine learning to achieve higher accuracy and efficiency. A comprehensive dataset comprising annotated radiographic images was utilized, ensuring representation across genders and age groups. The proposed model achieved significant performance metrics, including an accuracy of over 90%, along with high sensitivity, specificity, and F1-score. Grad-CAM visualizations were employed to interpret the network's decision-making process, highlighting the critical dental regions contributing to gender classification. The study demonstrates that the proposed automated approach not only reduces the subjectivity inherent in manual methods but also achieves rapid, reproducible, and scalable results. The findings underline the potential of AI-driven solutions in forensic science and dentistry, offering a promising tool for gender determination and related applications. This study will focus on expanding datasets and refining the model to address variations in image quality and population diversity in future.

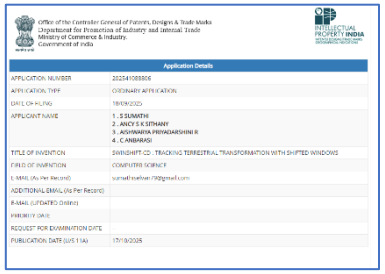
3.	 **Co-Author** **Dr. Thresa Jeniffer J** Published a paper in Scopus	**Thresa Jeniffer J;** Swetha M; Raghuvaran E; Deepa R; Surendran R, " Enhancing Sentiment Analysis with Multimodal Large Language Models," 2025 6th International Conference for Emerging Technology (INCET), BELGAUM, India, 2025, pp. 1-7, doi: 10.1109/INCET64471.2025.11140145. **(Indexed in Scopus)** **Abstract:** Sentiment analysis is crucial in understanding user opinions, emotions, and attitudes across various domains. Traditional sentiment analysis methods rely primarily on textual data, limiting their ability to capture the full context of human expression, often including multimodal elements such as images, audio, and videos. Existing approaches struggle with ambiguity, sarcasm, and lack of contextual awareness, reducing accuracy and effectiveness. To address these limitations, we propose a novel framework called Sentiment Analysis using Machine Learning with Multimodal Models (SA-ML-MM), which integrates text, images, and audio inputs using large language models (LLMs) enhanced with multimodal capabilities. The proposed framework is applied in social media analysis, customer feedback interpretation, and emotion recognition. Experimental results demonstrate that SA-ML-MM significantly outperforms traditional text-based models, achieving higher accuracy and robustness in sentiment prediction. By incorporating multiple data modalities, our approach effectively captures nuanced emotional expressions, making sentiment analysis more precise and reliable.

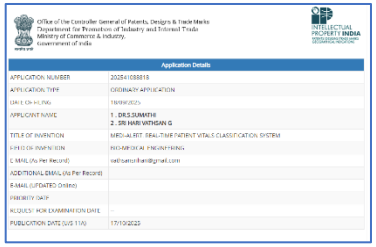
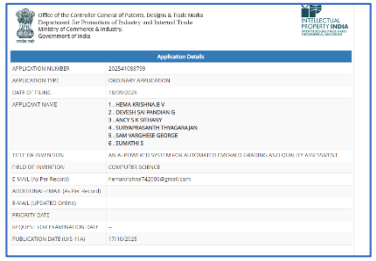
4.	 **Authors** **Mrs. Sinthuja P.M., Mithun Kumaran K., Mohamed Shakeel A.K,** Published a paper in Scopus indexed Conference	**Staff - Student Conference Publication** **Sinthuja P.M., Mithun Kumaran K., Mohamed Shakeel A.K.,** " Revolutionizing Seed Plant Classification: CNN Approaches for Enhanced Accuracy ", A. (eds) Computational Intelligence in Data Science. ICCIDS 2025. IFIP Advances in Information and Communication Technology, Print ISBN : 978-3-031-98359-7, Online ISBN:978-3-031-98360-3, vol 749. Springer, Cham. https://doi.org/10.1007/978-3-031-98360-3_16. **(Indexed In Scopus)** **Abstract:** Agricultural productivity has significantly advanced through innovations like the Green Revolution, but challenges such as climate change, population pressure, and resource scarcity demand modern technological interventions. This paper explores the use of Convolutional Neural Networks (CNNs) for classifying seed plant species, utilizing a labeled dataset comprising 12 plant categories, including Black-grass, Charlock, Cleavers, Common Chickweed, Common Wheat, Fat Hen, Loose Silky-bent, Maize, Scentless Mayweed, Shepherd's Purse, Small-flowered Cranesbill, and Sugar Beet. This capability allows for timely interventions, reducing crop losses and improving overall yield. As agriculture increasingly transitions toward data-driven decision-making, this study underscores the importance of adopting scalable, AI-powered solutions to address food security and environmental sustainability challenges.

5.	 **Authors** **Nandagopal, G.Joewin Daniel Raj, Mrs Sinthuja, P.M.,** Published a paper in Scopus	**Nandagopal, G.Joewin Daniel Raj, Sinthuja, P.M.**, "A Hybrid System for Sustainable Pesticide Application and Health", A. (eds) Computational Intelligence in Data Science. ICCIDS 2025. IFIP Advances in Information and Communication Technology, Print ISBN : 978-3-031-98363-4, Online ISBN : 978-3-031-98364-1, vol 750. Springer, Cham. https://doi.org/10.1007/978-3-031-98364-1_30. **(Indexed in Scopus)** **Abstract** Hybrids blockchain, AI, IoT, and 6G technology integration: It is a transformatory approach towards pesticide use in agriculture towards its optimization and protection of human life expectancy. In the research paper, I provide an all-inclusive framework. Using IoT sensors deployed in agriculture fields and real- time data collection, it monitors the soil moisture, temperature, and pesticide levels in the environment. The system considers hybrid blockchain technology, which enables secure and tamper-proof data management with transparency to comply with agrarian regulations. The 6G technology will implement ultra-fast communication, making instant decisions as well as instant automated action taken by smart contracts. It is a new framework aimed at supporting crop health and production, but more notably diminishing the exposure of hazardous pesticides toward humans and sustaining improved public health outcomes. The research will present solutions to the challenges in the management of pesticides to prove that new technologies can address issues of sustainable agricultural practices with minimal harm to human life.

6.	 **Authors** **Dharnesh, K., Eliza, J., Mr Radhakrishnan K.R.,** Published a paper in Scopus indexed	**Dharnesh, K., Eliza, J., Radhakrishnan, K.R.**, "Leveraging Attention Mechanisms for Toxic Comment Classification and Real-Time Moderation", A. (eds) Computational Intelligence in Data Science. ICCIDS 2025. IFIP Advances in Information and Communication Technology, Print ISBN : 978-3-031-98363-4, Online ISBN : 978-3-031-98364-1, vol 750. Springer, Cham. https://doi.org/10.1007/978-3-031-98364-1_4. **(Indexed in Scopus)** **Abstract** An optimized attention-based BiLSTM model for classifying harmful comments is presented in this research. It incorporates real-time data analysis and a live comment stream. Conventional machine learning models, such as CNNs and LSTMs, frequently have trouble identifying subtle types of toxicity including context - dependent hate speech, irony, and sarcasm. Traditional machine learning models, including CNNs and LSTMs fail to recognize subtle forms of toxicity, such as context-dependent hate speech, irony, and sarcasm. A BiLSTM network with an attention mechanism will be used in this proposed system in order to track the relationships of words and pick the important indicators of toxicity. More detailed analytics module on comment data allows users to monitor trends and patterns around toxicity in comments, user behavior, and comment patterns for various languages. The system produces visual reports with analysis over time of comment activity, sentiment distribution, and common toxic phrases. Automation in toxicity detection and provision of deep analysis enable the system to lead towards safer online environments while increasing moderation efficiency and scale.

7.	 **Authors** **Dasarath R, Giftson Samuel Raj T, Dr. Heltin Genitha C** Published a paper in Scopus	**Dasarath R, Giftson Samuel Raj T & Heltin Genitha C**, "Enhanced GAN Based Framework for Super Resolution of Satellite Images", A. (eds) Computational Intelligence in Data Science. ICCIDS 2025. IFIP Advances in Information and Communication Technology, vol 750. Springer, Cham. https://doi.org/10.1007/978-3-031-98364-1_23. **(Indexed in Scopus)** **Abstract** This paper aims to improve the resolution of space imagery with a better version of Super-Resolution Generative Adversarial Network (SRGAN). Normally, it is impossible to obtain images from satellites with reasonable resolutions. We proposed the application of Dense Residual Blocks and Progressive Growing of the Generator together in the architecture of SRGAN to achieve more refined training while progressively increasing the resolution of the images. Dense residual blocks enable more feature reuse and enhance information flow within the network, hence facilitating better learning and the capacity to learn many complex textures and spatial information. Progressive Growing of the generator enables the model to handle larger upscaling tasks much more smoothly by gradually increasing the generation complexity with the passage of the training process. Together, these advances significantly improve the stability in training, processing as well as the learning efficiency with enhanced images. The proposed enhanced SRGAN outperforms existing methods for generating high-resolution satellite images and is thus extremely applicable to real-world tasks requiring the reconstruction of fine details from low-resolution inputs.
8.	 **Ms E.Elakkiya** Published an Indian Patent	**<u>Patent Published</u>** **Title of the invention:** MACHINE LEARNING-BASED PREDICTIVE MODELING OF CONSUMER PURCHASE BEHAVIOR IN E-COMMERCE **Name of Inventor:** 1. Dr M.Sasi Bhushan 2. Dr.S.Naga Padma 3. V. Vineetha Naga Sai Ganga Devi 4. Dr. Deepthi Kuppuswamy 5. Dr. Nagaraja Pandukuri 6. Dr Deepak Sundrani 7. Dr.Sunil Kumar K 8. **E.Elakkiya** 9. N.Jayashree

		Application Number: 202541075990 **Date of filing of Application:** 10/08/2025 **Publication Date:** 05/09/2025
9.	 **Dr.S.Gopikha** Published an Indian Patent	**Title of the invention:** ML-DRIVEN FRAMEWORK FOR ANALYZING STUDENT FITNESS AND WELLBEING THROUGH SPORTS TRAINING IN HIGHER EDUCATION **Name of Inventor:** 1. Dr. R. Murugesan 2. Dr. Aakanksha Sharma (PT) 3. RaviTeja Aida 4. Dr.C.V.Lakshmi Narayana 5. Dr. Shaik Balkhis Banu 6. **Dr.S.Gopikha** 7. S Nandhini devi **Patent Application Number:** 202541083072 **Date of filing of Application:** 01/09/2025 **Publication Date:** 26/09/2025
10.	 **Dr.S.Sumathi** Published an Indian Patent	**Title of the invention:** SWINSHIFT-CD: TRACKING TERRESTRIAL TRANSFORMATION WITH SHIFTED WINDOWS **Name of Inventor:** 1**. S Sumathi** 2. Ancy S K Sithany 3. Aishwarya Priyadarshini R 4. C Anbarasi **Patent Application Number:** 202541088806 **Date of filing of Application:** 14/05/2025 **Publication Date:** 17/10/2025

11.	 Office of the Controller General of Patents, Designs & Trade Marks Department for Promotion of Industry and Internal Trade Ministry of Commerce & Industry, Government of India INTELLECTUAL PROPERTY INDIA Application Details APPLICATION NUMBER 202541088818 APPLICATION TYPE ORDINARY APPLICATION DATE OF FILING 18/09/2025 APPLICANT NAME 1. DR.S.SUMATHI 2. SRI HARI VATHSAN G TITLE OF INVENTION MEDI-ALERT: REAL-TIME PATIENT VITALS CLASSIFICATION SYSTEM FIELD OF INVENTION BIO-MEDICAL ENGINEERING E-MAIL (As Per Record) sridharisri9@gmail.com ADDITIONAL E-MAIL (As Per Record) E-MAIL (UPDATED Online) PRIORITY DATE REQUEST FOR EXAMINATION DATE PUBLICATION DATE (U/S 11A) 17/10/2025 **Dr.S.Sumathi** Published an Indian Patent	**Title of the invention:** MEDI-ALERT: REAL-TIME PATIENT VITALS CLASSIFICATION SYSTEM **Name of Inventor:** **1. Dr.S.Sumathi** 2. Sri Hari Vathsan G **Patent Application Number:** 202541088818 **Date of filing of Application:** 18/09/2025 **Publication Date:** 17/10/2025
12.	 Office of the Controller General of Patents, Designs & Trade Marks Department for Promotion of Industry and Internal Trade Ministry of Commerce & Industry, Government of India INTELLECTUAL PROPERTY INDIA Application Details APPLICATION NUMBER 202541088799 APPLICATION TYPE ORDINARY APPLICATION DATE OF FILING 18/09/2025 APPLICANT NAME 1. HEMA KRISHNA B V 2. DEVESH SAI PANDIAN G 3. ANCY S K SITHANY 4. SURYAPRASANTH THYAGARAJAN 5. SAM VARGHESE GEORGE 6. SUMATHI S TITLE OF INVENTION AN AI-POWERED SYSTEM FOR AUTOMATED EMERALD GRADING AND QUALITY ASSESSMENT FIELD OF INVENTION COMPUTER SCIENCE E-MAIL (As Per Record) hemakrishna7420068@gmail.com ADDITIONAL E-MAIL (As Per Record) E-MAIL (UPDATED Online) PRIORITY DATE REQUEST FOR EXAMINATION DATE -- PUBLICATION DATE (U/S 11A) 17/10/2025 **Dr.S.Sumathi** Published an Indian Patent	**Title of the invention:** AN AI-POWERED SYSTEM FOR AUTOMATED EMERALD GRADING AND QUALITY ASSESSMENT **Name of Inventor:** 1. Hema Krishna.B V 2. Devesh Sal Pandian G 3. Ancy S K Sithany 4. Suryaprasanth Thyagarajan 5. Sam Varghese George 6. **Sumathi S** **Patent Application Number:** 202541088799 **Date of filing of Application:** 18/09/2025 **Publication Date:** 17/10/2025

13.

Sample FDP Certificate

Seminar/ FDP Attended by Faculty

S.No	Title of the topic	Name of the Staff	Conducted By	Date
1	Bridge quantum computing with Artificial intelligence and data science	1. Mr. K Ashok Kumar 2. Ms. I Domilin Shyni 3. Ms. Ashlin Jenitha J R	Sri Venkateshwara College of engineering	6-10-2025. To 10-10-2025
2	IOT and Drones	1. Ms. I Domilin Shyni 2. Dr. J. Thresa Jeniffer 3. Ms. Hepsi Ajibah A S	St. Joseph's College of Engineering	7-10-25 to 11-10-25
3	Augmented Reality / Virtual Reality (AR/VR)	Ms. Ashlin Jenitha J R	Dr.Vithalrao Vikhe Patil College of Engineering, Ahilyanagar, Maharashtra.	25-08-2025 to 31-08-2025(6 Days)

DEPARTMENT OF MATHEMATICS AND ENGLISH

<table>
<tr><th>Events</th><th>Remarks</th></tr>
<tr><td colspan="2">FDP/Workshop/Conference</td></tr>
<tr><td>  </td><td>
<table>
<tr><th>S.No</th><th>Staff Name</th><th>NPTEL Course Name</th><th>Organized by</th><th>Duration</th></tr>
<tr><td>1</td><td>Dr.G.Venkat Narayanan</td><td rowspan="3">Accreditation and Outcome Based Learning</td><td rowspan="3">IIT Kharagpur</td><td rowspan="3">July – Oct 2025</td></tr>
<tr><td>2</td><td>Dr. P. Agilan</td></tr>
<tr><td>3.</td><td>Dr. S. Aruna</td></tr>
</table>
</td></tr>
<tr><td>Publications(only published) details</td><td>
1. S. Prabhu, T. Jenifer Janany, M. Arulperumjothi, I.G. Yero, Edge metric basis and its fault tolerance over certain interconnection networks, Journal of Parallel and Distributed Computing, Volume 204, 2025,105141,https://doi.org/10.1016/j.jpdc.2025.105141.

2. Alhazmi, Muflih, Gangatharan Venkat Narayanan, Perumal Chellamani, and Shreefa O. Hilali. 2025. "Exploring Symmetry Structures in Integrity-Based Vulnerability Analysis Using Bipolar Fuzzy Graph Theory" Symmetry 17, no. 9: 1552. https://doi.org/10.3390/sym17091552, SCIE

3. Sridhar, A., Kudiyarasudevi, C., Venkat Narayanan, G. et al. Breast Cancer Detection Using a Graph-Steerable Network and Bio- Inspired Optimization. Biomedical Materials & Devices (2025). https://doi.org/10.1007/s44174-025-00500-4 (SCOPUS)
</td></tr>
</table>

DEPARTMENT OF SCIENCE

Events	Remarks
FDP/Workshop/Conference	1. Dr. S. Kiruba, Dr. S. Suresh and Dr. N. Punitha had attended online Faculty Development Program on “Experimental and Computational Physics " held from 06.10.25 to 10.10.25, conducted by “Bon Secours College for Women (Autonomous), Thanjavur”. 2. Dr. K. Dhanaraj had attended online Faculty Development Program on "Advanced Functional Materials " held from 15.10.25 to 17.10.25, conducted by “Dr. M.G.R. Educational and Research Institute, Off Campus – Arni.”.
Awards/Prize won by students / Staff	***Staff:*** 1. Dr. A. Uma Devi received the “Academic Excellence Award” from the Australian Scientific Research Reports (SRR Books), Chennai on 09.10.2025. 2. Dr. A. Uma Devi received a NPTEL certification on the title of “Python for Data Science” with Elite grade, on 07.10.2025 ***Students:*** 1. Mr. Pragadeeswar J, Mr. Srivatsan B, Mr. Prasanna A (I- ADS) , won II prize in the Stellar Quest -National Level Technical Fest “FESTXZ’25” Conducted by Sree Sairam Engineering College, Chennai, held on 27-10-2025 2. Ms Mithra S, Mr. J. Lawrence, Mr. Naveen K. (I- ADS) , won III prize in the Stellar Quest -National Level Technical Fest “FESTXZ’25” Conducted by Sree

	Sairam Engineering College, Chennai, held on 27-10-2025
Industrial Projects done by students	The following I year student teams have won the best project certifications and internship opportunities, in the Make-a-thon 2.0 Event conducted by St. Joseph's College of Engineering, Chennai held on 30-10-2025. i. Cybernetic Coders, Green Genius – Cybersecurity ii. Code Geeks, Hardware Hackers, Heisenberg's Uncertain Candidates, Prompt Prodigies, Access Denied - ECE iii. Pentaverse, Solarize – ADS iv. Digital Dreamers, Solution squad – EEE v. Neural Networkerzz – AML
Publications(only published) details	***Journal Publications:*** 1. Dr. P. Saravanan has published a research article titled "Toxic threats from plastic waste: human health impacts, challenges, and policy solutions" in the "RSC Advances", 48 (2025) doi: https://doi.org/10.1039/D5RA05845G 2. Dr. N. Punitha has published a research article titled "Performance and emission characteristics of waste cooking oil biodiesel blends in sustainable fuel applications" in the journal of "Scientific Reports," 15 (2025) 35184 doi: https://doi.org/10.1038/s41598-025-19130-3 3. Dr. A. Uma Devi has published a research article titled "Experimental study on mechanical performance and microstructural characterization of optimized sisal fiber reinforced polyester composites" in the journal of "Scientific Reports ," 15 (2025) 36348 doi: https://doi.org/10.1038/s41598-025-20177-5

	4. Dr. J. Sharmila has published a research article titled “Development of Polymer–Micro-Aluminum Composites for Lightweight Engineering Applications” in the “Journal of Polymer & Composites”, 13 (2025) 1-12 5. Dr. P. Krishnan has published a research article titled “Effect of pH, optical properties, etching and piezoelectric analysis of boric acid mediated organo-metallic crystal: lithium boro dilactate” in the journal “Applied Physics A” 131 (2025) 853, doi: https://doi.org/10.1007/s00339-025-08955-4 6. Dr. K. Jayamoorthy has published a research article titled “Functionalization of Halo-hydroxy Benzimidazole onto silica nanoparticles: Catlytic, Photophysical and biological investigations for sustainable applications” in the Journal “Silicon” (2025), doi: https://doi.org/10.1007/s12633-025-03449-7 7. Dr. B. Subash has published a research article titled “SyzygiumCumini-assisted green synthesis of lead oxide nanoparticles (PbO-NPs): investigating the practical use of the PbO-SyzygiumCumini composite as corrosion inhibitor on mild steel in highly aggressive environment in the journal of “Chemical Physics”. 79 (2025) 8481-8490, doi: https://doi.org/10.1007/s11696-025-04327-7 ***Book Chapters*** Dr. N. Punitha has published a book chapter titled “Enhancing Real-Time Communication With Brain-Computer Interface Technologies” in the book “Concepts and Applications of Brain-Computer Interfaces” published “IGI Global Publishers”.(2025) 165-180 doi:10.4018/979-8-3693-7427-6.ch009 ***Reviewers:***

	1. Dr. P. Saravanan – European Food research and Technology 2. Dr. S. Suresh - Iranian Polymer journal, Current Organic chemistry 3. Dr. N.R. Rajagopalan – Optik 4. Dr. P. Krishnan – Chemical Data Collections 5 Dr. K. Jayamoorthy – Mini Reviwes in Organic Chemistry, International Journal of Clinical Microbiology, Materials Science in Semiconductor Processing, Measurement, Chemistry Select, Microchemical Journal, Journal of Molecular Structure, Chemistry and Biodiversity 4. Dr. B. Subash – Current Analytical Chemistry, Chemical Physics Impact
Funded Projects	**--**
Other activities(if any)	1. The following NGO visit and service program has been organized by the Department of Science. ***Date – 16-10-2025*** AML A – Saastha Charitable Trust–Old Age Home, Kundrathur AML B – Mission to Blind, Madhavaram Cyber Security – Paradise Home for CP Children, Muttukadu Chemical & Mechatronics – Hope Home & Vocational Training Centre, Pattabiram

	M.Tech - CS – Ashirwadh Care Home, Injambakkam ECE A – Mahimai Illam for CP Children, Chengalpattu ECE B – John D Britto Old Age Home, Kovalam ECE C – St. Vincent Anbu Illam, Oragadam ***Date – 25-10-2025*** EEE A – Natchathira Old Age Home, Noombal EEE B – Annai Fathima Child Welfare Centre & Old Age Home, Karapakkam ADS A – Mahimai Illam for CP Children, Chengalpattu ADS B – Hope Residential Home & Vocational Training Centre, Pattabiram ADS C – Manasu CP Children's Home, Tirusulam ADS D – Paradise Home for CP Children, Muttukadu 2. The following ***Alumni talk and interaction*** programs were organized by the Department of Science. (i) 17-10-2025 - By – Lt. Col. Diwakar D (2006-2010 Batch – EEE), NSG Commando in the Indian Army; Title – Career for Engineers in Indian Army

	(ii) 24-10-2025 - By - Ms. Sarannya Dayanandan (2015-2019 Batch – EEE), Lead Engineer, Bosch Global Software Technologies ; Title – Designing Your Future with AI (iii) 25-10-2025 - Given By – Mr. Prem Dakshin , (2014-2018 Batch – Mech) – Sr. HR & BP, ESDS Software Solutions, Chennai – Title - Journey, Insights, and Opportunities.