SEPTEMBER 2025

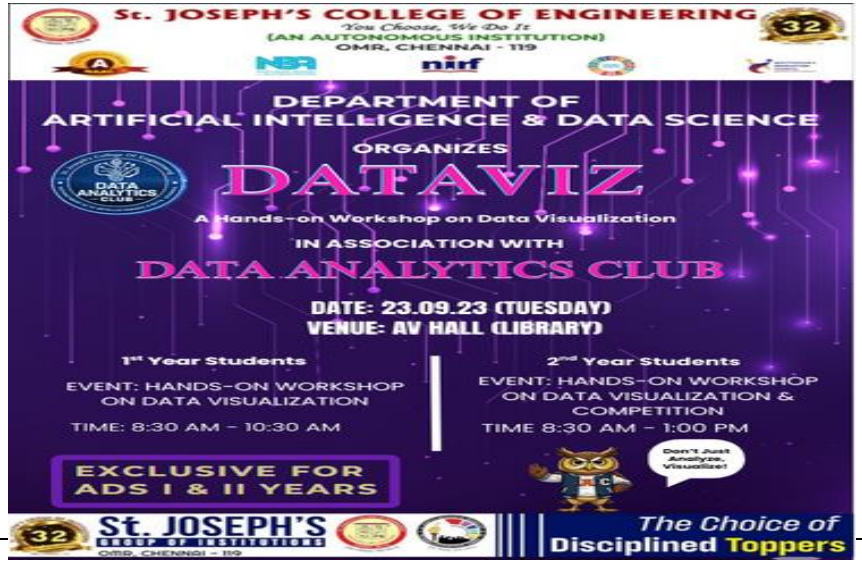
DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

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.	**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.

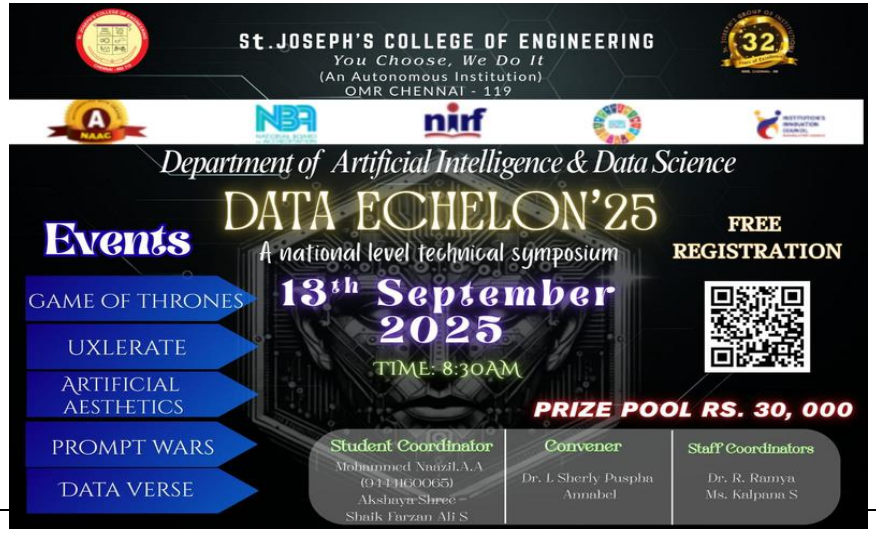
The Department of Artificial Intelligence and Data Science of St. Joseph's College of Engineering, OMR, Chennai, is organizing a workshop titled "Code to Success" on 4th September 2025 from 9:30 AM to 1:00 PM at Laurel Hall (Placement Block). This exclusive workshop is designed for 3rd year ADS students 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.

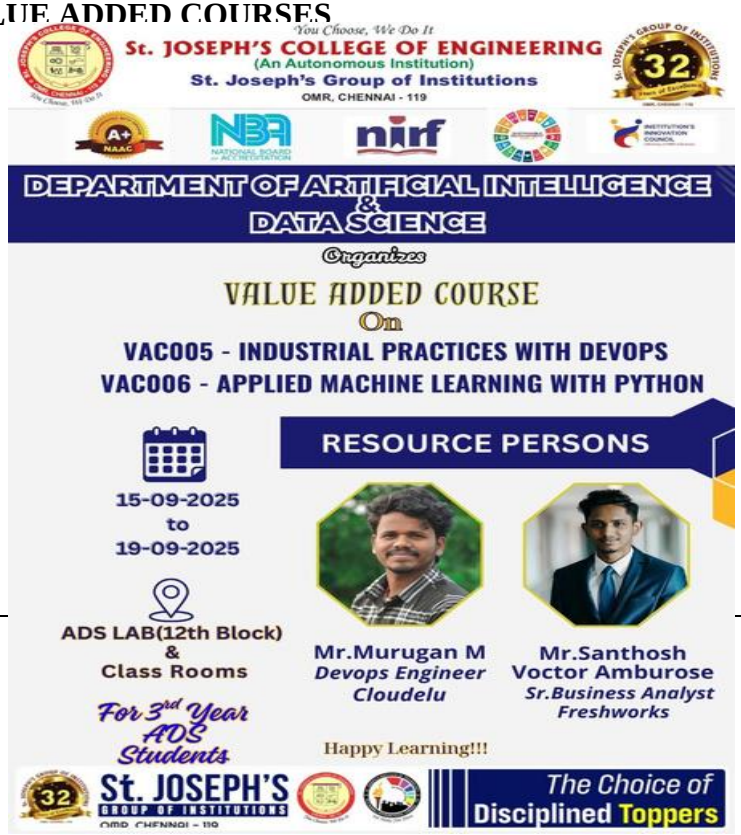


The Department of Artificial Intelligence and Data Science at St. Joseph's College of Engineering organized DATAVIZ, a hands-on workshop on Data Visualization, in association with the Data Analytics Club. The event was conducted on 23rd September 2023 at the AV Hall (Library) and was exclusively designed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

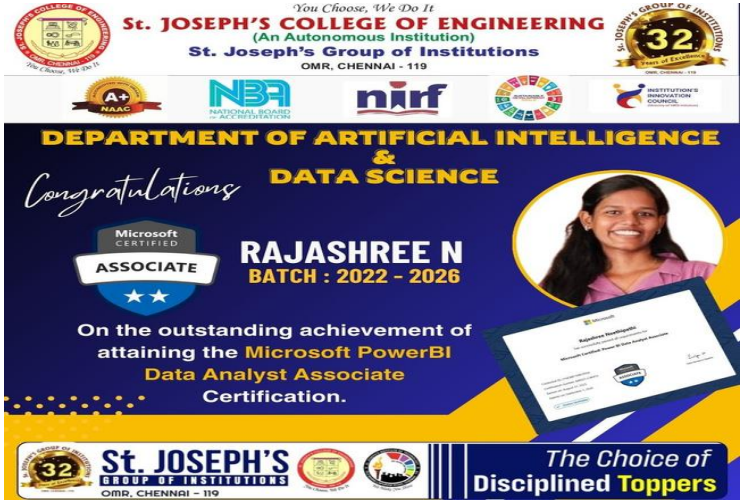
AM to 10:30 AM. For second-year students, the workshop extended till 1:00 PM and included a Data Visualization Competition, giving them a platform to apply their knowledge creatively.

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.
3.	**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
4.	**STTP**	-
5.	**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

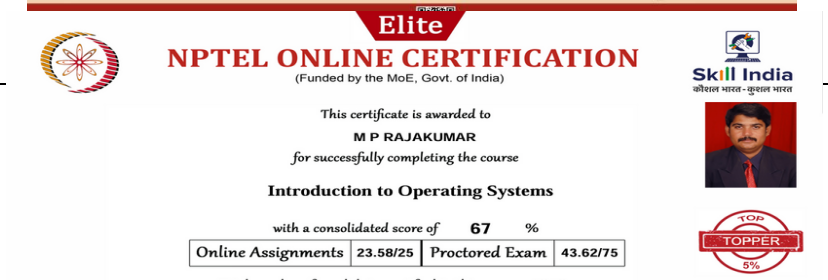
		Syasans Career Analytics, focusing on Python-based model building. Students actively participated, worked on mini-projects, and gained exposure to real-world tools like Git, Docker, and Jenkins.
6.	**STUDENTS ACHIEVEMENTS/COMPETITION ATTENDED BY STUDENTS**  	Rajashree N has successfully attained the 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

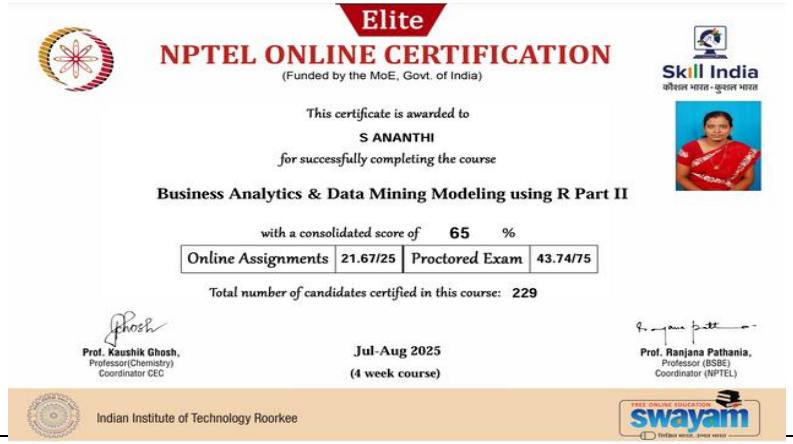
		AWS Community Builder and a former AWS Cloud Captain. Her achievement highlights the college's commitment to fostering innovation. St. Joseph’s College of Engineering, an autonomous institution on OMR, Chennai, continues to empower its students. This global recognition underscores the quality of its 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.
7.	**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.
8.	**INDUSTRIAL PROJECTS DONE BY STUDENTS**	-

9.	**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
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Keywords
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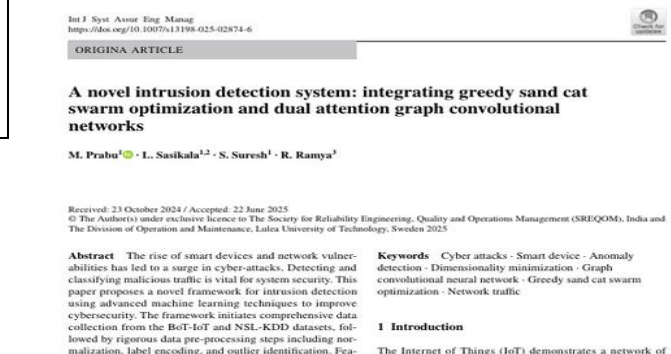
More Like This

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]

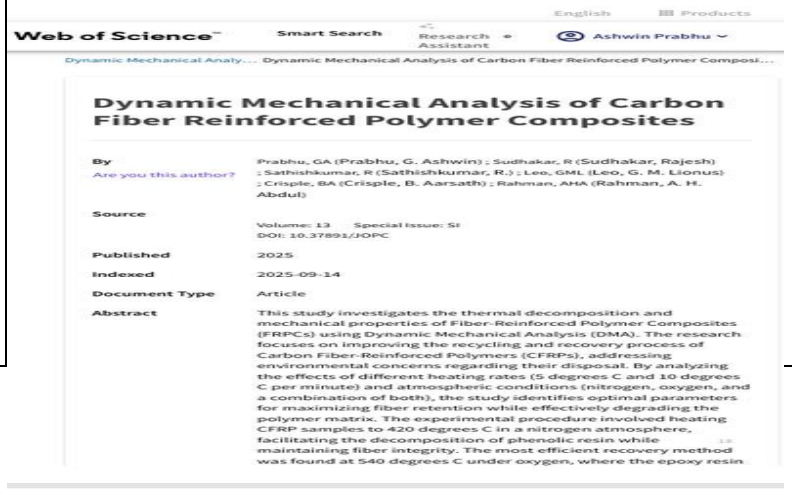
Received: 23 October 2024 / Accepted: 22 June 2025
© The Author(s) under exclusive licence to The Society for Reliability Engineering, Quality and Operations Management (SREQOM), India and The Division of Operation and Maintenance, Lulea University of Technology, Sweden 2025

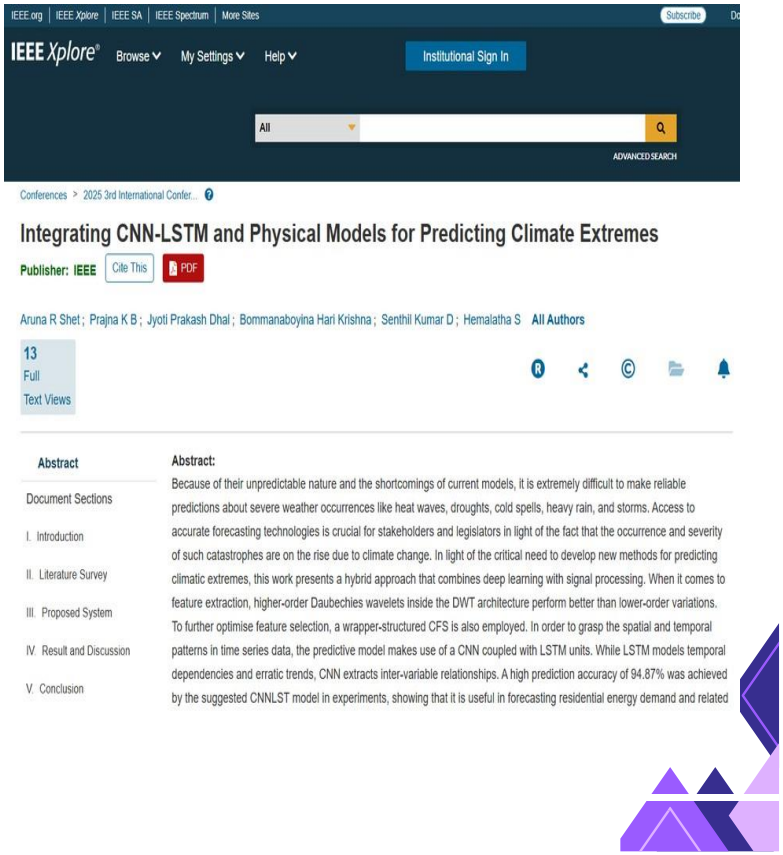
Abstract The rise of smart devices and network vulnerabilities has led to a surge in cyber-attacks. Detecting and classifying malicious traffic is vital for system security. This paper proposes a novel framework for intrusion detection using advanced machine learning techniques to improve cybersecurity. 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.
10.	**FUNDED PROJECTS**	-
11.	**STAFF CONFERENCE PRESENTATION and PATENT PUBLISHED** 	

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
Autonomous

ICSCSA

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

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.

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

ICIDCA

IEEE

IEEE ComSoc

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

at the

7th International Conference on Innovative Data Communication Technologies and Application (ICIDCA 2025)

organised by RVS College of Engineering and Technology, Coimbatore, India on 6-8, October 2025.

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.

		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

(57) Abstract :

The proposed invention discloses an intelligent, deep learning-based cybersecurity system designed to detect and prevent cyber threats in Internet of Things (IoT) environments.

The Patent Office Journal No. 38/2025 Dated 19/09/2025 92464

(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	(71)Name of Applicant : 1)Mr. Neeraj Kumar Address of Applicant :Assistant Professor (Grade-1), Galgotias University, Plot No. 2, Yamuna Expy, opposite Buddha International Circuit, Sector 17A, Greater Noida, Uttar Pradesh, India. Pin Code:203201 2)Dr. Ravula Divya 3)Dr. Vemuri Venkata Phani Babu 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 Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1)Mr. Neeraj Kumar Address of Applicant :Assistant Professor (Grade-1), Galgotias University, Plot No. 2, Yamuna Expy, opposite Buddha International Circuit, Sector 17A, Greater Noida, Uttar Pradesh, India. Pin Code:203201 2)Dr. Ravula Divya Address of Applicant :Assistant Professor, Department of Electronics and Communication Engineering, RK College of Engineering, Kethanakonda, Vijayawada, Andhra Pradesh, India. Pin Code:521456 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

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

(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

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4)Dr. Bhoshankumar Narayan Shinde
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6)Dr. P. Karthigaikumar
7)P. Durga Devi
Name of Applicant : NA
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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

(19) INDIA

(22) Date of filing of Application :26/08/2025

(21) Application No.202541080640 A

(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

(51) International classification	:G01N0033000000, H04W0084180000, G06Q0020100000, G08C0001010000, G06Q0020400000
(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 :**
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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)Madadla Asha
11)S Nagoorkani
12)Dr. Padmesh Medisetty
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Address of Applicant :Assistant Professor Chemical Engineering VSB Engineering College Karudayampalayam 639111 Karur

(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

(19) INDIA

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

(21) Application No.202541077899 A

(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

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3)Hari Krishna Vemuri
4)Kaushik V S
5)Dr. Hirendra Singh
6)K.Thangadurai
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8)Senthil Kumar D
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10)Chethana T V
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(57) Abstract :
Machine Learning and IoT-Based Intelligent System for Defect Detection and Quality Assurance in Supply Chain Management is the proposed invention. The proposed invention focuses on understanding the functions of Supply Chain Management. The invention focuses on analyzing the parameters of Intelligent System for Defect Detection and Quality Assurance using algorithms of IoT Approach.

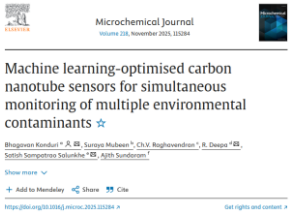
No. of Pages : 14 No. of Claims : 4

The Patent Office Journal No. 35/2025 Dated 29/08/2025 83331

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

		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.	**Ms. Deepa R** **Published Paper**  Microchemical Journal Machine learning-optimised carbon nanotube sensors for simultaneous monitoring of multiple environmental contaminants ☆	**Title of the Paper –** Machine learning-optimised carbon nanotube sensors for simultaneous monitoring of multiple environmental contaminants Abstract: This study presents a machine learning (ML)-optimised carbon nanotube (CNT) sensor platform for the simultaneous detection and quantification of multiple environmental contaminants, including heavy metals, organic pollutants, and gaseous compounds. The platform integrates a hierarchical 16-element CNT array with a multi-task deep learning model, utilizing a Synthetic Signature Subtraction (S^3) algorithm to minimize cross-reactivity and interference. The system employs a combination of multi-functional CNTs and ML-driven signal processing to achieve high classification accuracy (94.2 %), low detection limits (0.05–1.2 ppb), and fast response times (30–120 s) across complex environmental matrices, including river water, groundwater, and seawater. Real-world validation demonstrates that the system maintains 87.3–96.8 % accuracy in these challenging conditions, with cross-reactivity reduction factors of 13–28× compared to conventional CNT sensors. The platform is designed for real-time operation with low power consumption (315 mW average), achieving approximately 35 h of continuous operation on a 3.7 V, 3000 mAh battery with a 32-s measurement cycle. The wireless-enabled system provides a 90 % cost reduction compared to conventional analytical methods while enabling field deployment for environmental monitoring applications. This work demonstrates the potential of ML-optimised CNT sensors for comprehensive environmental surveillance, with practical advantages in analysis speed, cost-effectiveness, and multi-analyte detection capability for regulatory compliance and pollution monitoring.
	Ms. Deepa R **Published Patent**	

2.		**Title of Innovation:** AI-Driven Chemoinformatics System for Drug Discovery
3.	**Dr. Adlin Sheeba** **Published Patent** 	**Title of Innovation:** Edge-Enabled Brain Tumor Detection Framework via Federated Deep Learning on MRI Scans
4.	**Ms. Umayal AR** **Published Patent** 	**Title of Innovation:** AI-Driven Cyber Security Framework for Automated Threat Detection and Mitigation

Certificates received by the Faculty

FDP & PDP attended by Faculty

S.No.	Name of the FDP	Name of the Staff	Conducted By	Duration
1.	ATAL - Next-Gen Intelligence: AI Applications in Industry, Academia, and Beyond	Dr. Adlin Sheeba	St. Joseph's Institute of Technology	08.09.2025 to 13.09.2025
2.	ATAL - Next-Gen Intelligence: AI Applications in	Dr. Raman CJ	St. Joseph's Institute of Technology	08.09.2025 to 13.09.2025

5.	  			Industry, Academia, and Beyond			
			3.	ATAL - Next-Gen Intelligence: AI Applications in Industry, Academia, and Beyond	Dr. Manikandan G	St. Joseph's Institute of Technology	08.09.2025 to 13.09.2025
			4.	ATAL - Next-Gen Intelligence: AI Applications in Industry, Academia, and Beyond	Ms. Thiraviaselvi G	St. Joseph's Institute of Technology	08.09.2025 to 13.09.2025
			5.	ATAL - Next-Gen Intelligence: AI Applications in Industry, Academia, and Beyond	Ms. Kiruba Wesley	St. Joseph's Institute of Technology	08.09.2025 to 13.09.2025
			6.	ATAL - Next-Gen Intelligence: AI Applications in	Ms. Quba Jaslin C	St. Joseph's Institute of Technology	08.09.2025 to 13.09.2025

	  					
				Industry, Academia, and Beyond			
			7.	ATAL - Next-Gen Intelligence: AI Applications in Industry, Academia, and Beyond	Mr.Nirmalkumar V	St. Joseph's Institute of Technology	08.09.2025 to 13.09.2025
			8.	ATAL - Next-Gen Intelligence: AI Applications in Industry, Academia, and Beyond	Ms. Shaafia Tasneem	St. Joseph's Institute of Technology	08.09.2025 to 13.09.2025
			9.	ATAL - Next-Gen Intelligence: AI Applications in Industry, Academia, and Beyond	Ms. Deepa R	St. Joseph's Institute of Technology	08.09.2025 to 13.09.2025
			10.	ATAL - Next-Gen Intelligence: AI Applications in	Ms. Divya P	St. Joseph's Institute of Technology	08.09.2025 to 13.09.2025

	Industry, Academia, and Beyond			
11.	ATAL - Next-Gen Intelligence: AI Applications in Industry, Academia, and Beyond	Ms. Nithya K	St. Joseph's Institute of Technology	08.09.2025 to 13.09.2025
12.	ATAL - Next-Gen Intelligence: AI Applications in Industry, Academia, and Beyond	Ms. Adlin Layola JA	St. Joseph's Institute of Technology	08.09.2025 to 13.09.2025

6.

Certificates received by the Faculty






NPTEL Online Certification & NPTEL - AICTE FDP by the faculty

S.No.	Name of the Course	Name of the Staff	Secured Grade	Duration
1.	Demystifying Networking	Dr. Adlin Sheeba	Elite + Silver	4 week
2.	Demystifying Networking	Ms. Kiruba Wesley	Elite	4 week
3.	Demystifying Networking	Ms. Meena Kumari Bugatha N	Elite	4 week
4.	Demystifying Networking	Ms. Nithya K	Elite	4 week
5.	Demystifying Networking	Ms. Nivi	Elite	4 week

			6.	Introduction to Operating System	Ms. Thiraviaselvi	Elite	8 Week

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.	**Guest Lecture / Webinar Organized**	• Workshop has been conducted for final year students titled **"BIM-REVIT 2025-A Hands on Training** " by Petricore Technologies during 1.9.2025 & 2.9.2025. • Guest Lecture has been organized for final year students titled **"Awareness Program on "Career Opportunities for Civil Engineering Students through UPSC, SSC, TNPSC & GATE**" by Dr.T.MURALI KRISHNA Ph.D,Associate Director,Vetrii Engineering Academy,Chennaion 18.9.2025.
2.	**Value added Courses/Courses other than VAC**	• **Value Added Course** has been conducted by Edifice Solutions for 40 students from final year titled **"STAAD PRO** " during 8.9.2025 to 12.9.2025. • **Skill Development Programme** has been conducted by Denovo Software Solutions for 23 students from final year titled "**Hands on Training on MEP and Project Management"** during 24.09.2025 to 30.09.2025.
3.	**Other activities (if any)**	• **Alumni Talk** has been organized for final year students titled **"Career Paths in Civil Engineering"** delivered by **Ajith Thambusamy**, 2014-2018 Batch , Management Consultant, Protiviti Middle East Member firm ,Riyadh, Saudi Arabia on 7.9.2025 . • **Alumni Talk** has been organized for final year students titled **"Precision in Practice: Insights into Estimation and Detailing"** delivered by **Shakthi**

		Ravikumar 2021-2025 Batch, Design Engineer , J & F (India) Private Limited ,Guindy Chennai-32 on 3.9.2025. • **Alumni Talk** has been organized for final year students titled **"Building Futures: Pursuing Higher Education"** delivered by **Bravith S** (2021-2025 Batch), Pursuing PG In Advanced Construction Management, NICMAR, Hyderabad on 6.9.2025 .

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Sl. No.	Event with Photo	Description
1	**Guest Lecture 1- From Idea to Patent: Bridging Academic Projects with Technological Innovation"**	**Date** : 16.09.2025 **Venue** : **Conference Hall – 12th block** **Nature of Event** : Guest Lecture 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	**Guest Lecture II- Enhancing Career Opportunities in Cyber Security -Pathway to Purpose**	**Description**
	  	**Date : 17.09.2025** **Venue : Conference Hall, 12th block** **Nature of Event : Guest Lecture** **Participants : II , III & IV Year students** **Objective :** • To provide students with insights from industry or academic experts beyond the regular curriculum. • To link theoretical learning with practical, real-world applications and experiences. • To broaden knowledge, inspire critical thinking, and motivate career-oriented growth. **Outcome :** • Participants gain updated and specialized information from experts. • Improved understanding of industry trends, challenges, and real-world practices. • Enhanced inspiration and clarity about career paths, skills, and future opportunities.

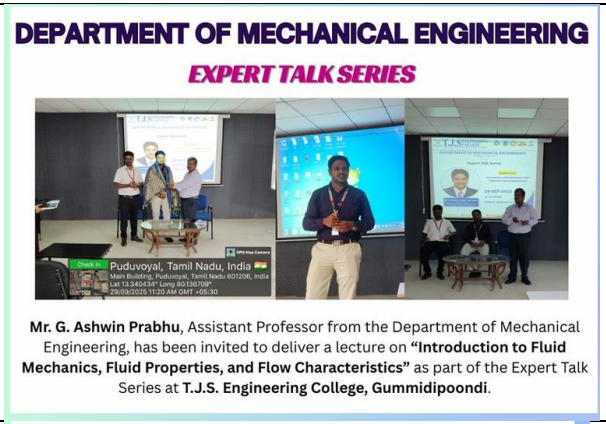
DEPARTMENT OF MECHANICAL ENGINEERING

Sl No	Name of the Activity	Remarks
1	**FACULTY ACHEIVEMENTS**	➢ Mr. G. Ashwin Prabhu, Assistant Professor, Department of Mechanical Engineering, have received a Reviewer Certificate from the journal Discover Materials (Springer) on 4th September 2025, in recognition of his contribution to the peer review process. ➢ Mr. G. Ashwin Prabhu (AP), from the Department of Mechanical Engineering Published an article titled "Development and Assessment of Mechanical Characteristics in Sisal-Glass Fiber Reinforced Epoxy Composites" in "Journal of Polymer & Composite", a Web of Science (ESCI) Indexed Journal with an Impressive Impact Factor of 6.005 on 12th September 2025. ➢ Mr. Vijayanand J (AP) and Vaddi Seshagiri Rao , Professor & Principal from the Department of Mechanical Engineering published an article titled " Effect of welding parameters on reducing copper wire consumption costs in robotic welding using response surface methodology and artificial neural networks" in the International Journal on Interactive Design and Manufacturing, a SCI-indexed journal on 11 September 2025, with an impact factor of 2.5. ➢ Mr. G. Ashwin Prabhu, Assistant Professor from the Department of

		Mechanical Engineering Published an article titled "Optimizing hybrid composites: Enhancing mechanical properties with SiC and Al2O3 nanoparticles using response surface methodology", in "Journal of Materials Research" a SCIE Indexed & Anna University Annexure 1, Q2 Journal with an impact factor of 2.9 on 19th September 2025 ➢ Mr. N. Sathishkumar, Assistant Professor from the Department of Mechanical Engineering Published a research article titled “Pulsed Laser Deposition of Hydroxyapatite Coatings on Laser Sintered Polyamide for Enhanced Osseointegration”, in “Materials Chemistry and Physics” a SCIE Indexed & Anna University Annexure 1, Q1 Journal with an Impact Factor of 4.7. ➢ Mr. N. Sathishkumar, Assistant Professor from the Department of Mechanical Engineering Published a research article titled “Microstructural and Mechanical Characterization of Gas Tungsten Arc Welded Borated Stainless Steel”, in “Journal of The Institution of Engineers (India): Series D” a Scopus Indexed Q2 Journal with an Impact Factor of 2.10. ➢ Mr. N. Sathishkumar, Assistant Professor from the Department of Mechanical Engineering Published a research article titled “Surface Topography Modulation of Hydroxyapatite-Coated Polyamide Using Pulsed Laser Deposition for Improved Tissue Integration”, in “Journal of Thermal Spray Technology” a SCIE Indexed & Anna University Annexure 1, Q2 Journal with an Impact Factor of 3.3.

		➢ Mr. N. Sathishkumar, Assistant Professor from the Department of Mechanical Engineering acted as a reviewer for the Journal “Materials Research Express” a SCIE Indexed & Anna University Annexure 1, Q2 Journal with an Impact Factor of 2.2 ➢ Mr. N. Sathishkumar, Assistant Professor from the Department of Mechanical Engineering acted as a reviewer for the Journal “Results in Surfaces and Interfaces” a SCIE Indexed & Anna University Annexure 1, Q1 Journal with an Impact Factor of 4.4. ➢ Mr. N. Sathishkumar, Assistant Professor from the Department of Mechanical Engineering acted as a reviewer for the Journal “Engineering Research Express” an ESCI and Scopus Indexed Q2 Journal with an Impact Factor of 1.6. ➢ 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 24th September 2025, in recognition of his contribution to the peer review process. ➢ Mr. M. Subramanian, Assistant Professor from Department of Mechanical Engineering , Attended a One day Hands-on Training on Atomic Absorption Specrometer(AAS 2025) organized by the DST-FIST Nanomaterials Characterization Lab, St. Joseph’s College of Enginering on 26/09/2025 ➢ Mr. T. Balasubramanian, Assistant Professor from Department of

		Mechanical Engineering , Attended a One day Hands-on Training on Atomic Absorption Specrometer(AAS 2025) organized by the DST-FIST Nanomaterials Characterization Lab, , St. Joseph's College of Enginering on 26/09/2025 ➢ Prof. Sathish Rangarajan, 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.. ➢ Prof. Sathish Rangarajan, 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
2		Mr. K. Pravinkumar from the Department of Mechanical Engineering has successfully completed the NPTEL Online Certification course on Manufacturing Processes – Casting and Joining (July–August 2025), offered by IIT Kanpur under the Ministry of Education, Government of India. He secured an Elite Silver certificate with an impressive 86% consolidated score. With this achievement, he has ranked among the Top 2% of 596 certified candidates, showcasing his strong technical knowledge, dedication, and commitment to continuous learning in the field of Mechanical Engineering

3		➢ Mr. G. Ashwin Prabhu, Assistant Professor from the Department of Mechanical Engineering delivered a Lecture on Fluid Mechanics on 29 september 2025, as part of the Expert Talk Series at T.J.S. Engineering College, Gummidipoondi
5		➢
		Our Mechanical Engineering department's Industry Coordinator, Mr. Vijayanand, Assisttant Professor, visited the above companies of one of our alumni in Coimbatore to facilitate industry–institute interaction in the core domain. Mr Sai Dinesh and Mr Srinath , Managing Directors of Amma Alloys Coimbatore, was our alumni of St Joseph's College of Engineering, who have interacted with out faculty and they have offered the placement and training for our mechanical students.

	 	Dr. K. Arun, Associate Professor, Department of Mechanical Engineering, Attended the Regional Defence MSME Conclave 2025 “Resilient MSME Supply Chain for Defence Systems” on 9th September 2025, Tuesday at Hotel Radission, Salem, The visit was a initiative on STARTUP Tamil Nadu Initiative and Interaction with Defence based Manufacturing Industries
	Student Workshop:   Department of Mechanical Engineering organized workhop for III year Mechanical Students With MoU Signed company Aqua Forge Pvt Ltd. The workshop was scheduled on 02/09/2025 and 03/09/2025.   Department of Mechanical Engineering organized workhop for II year Mechanical & Mechatronics Students With MoU Signed company TEEV Energy Pvt Ltd. The workshop was scheduled on 02/09/2025 and 03/09/2025.	➢
	Value Added Course:	Department of Mechanical Engineering, Organized Value Added Course “ Electrical Harness and Routing Design for Electric Vehicles for our Final year students, 136 Students particpated and completed the course with Assessment

			Test

		➢ We are proud to announce that seven students from the Department of Mechatronics Engineering have achieved Elite certification in the NPTEL course “Manufacturing Processes – Casting and Joining.” Among them, Mr. Akash distinguished himself by securing a place in the top 5% of participants nationwide and was awarded the Silver Medal for his outstanding performance

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 Department of Electrical and Electronics Engineering, in collaboration with the IEEE Student Branch Chapter of St. Joseph's College of Engineering, organized the mentorship panel session "She's Back!" on September 26, 2025, at the Placement Block.The event was exclusively for returning mothers, providing a supportive space for encouragement and professional growth. The session was led by Dr. Jayarama Pradeep, Exec Com Member of IEEE WIE AG Madras Section and Professor & Head of the EEE Department. She emphasized the importance of resilience, self-belief, and determination for women resuming their careers. Practical strategies were shared for balancing personal and professional responsibilities effectively. The session inspired participants to adapt confidently to today's dynamic work environment.

2.	**IEEE activities**  ***PIC: EVENT POSTER & PHOTO***	The IEEE Student Branch Chapter (SBC60101) of St. Joseph's College of Engineering organized an insightful session titled "India's Space Economy: $44 Billion Dream by 2033" on September 24, 2025, from 08:00 PM to 09:00 PM (IST).The session was delivered by Mr. Manish Purohit, accomplished Space Scientist, ex-ISRO professional, Founder of NIMBUS Education, and TEDx Speaker from Rajasthan. He shared his expertise on the future trajectory of India's growing space economy. The talk highlighted emerging opportunities and technological advancements in the space sector. Mr. Purohit emphasized India's expanding role in the global space industry. Participants gained insights into the nation's ambitious goals in exploration and innovation. The session inspired attendees to recognize India's potential in achieving its $44 billion space dream.
3.	**IEEE activities**	The IEEE Student Branch (SBC60101) of St. Joseph's College of Engineering organized "The Soul Stretch - Yoga Session" as part of the Returning Mothers Day Celebration. The session was conducted exclusively for returning mothers of the institution with 30 participants. It was led by Ms. Mahalaxmi, a third-year student, who emphasized the importance of physical health, mental peace, and emotional stability. Participants practiced breathing exercises, stretching, and simple yoga postures suitable for daily routines. The session also highlighted the role of a balanced diet, relaxation techniques, and lifestyle improvements. Interactive learning allowed mothers to engage, share, and practice together. The event concluded with a vote of thanks, appreciating the efforts of the speaker and participants. Overall, the session promoted wellness, reduced

	 ***PIC: EVENT POSTER***	stress, and encouraged healthier lifestyle practices among returning mothers.
4.	**IEEE activities**	The IEEE St. Joseph's College of Engineering Student Branch Chapter (SBC60101) successfully hosted the Frames of Love- RM Day Photo Contest on 18th to 20th September, 2025. The event invited students and staff to submit photographs that captured the personal significance and emotional essence of Returning Mothers Day. The contest aimed to creatively highlight the dedication, resilience, and love of mothers as they transition back into their professional lives after childbirth. Entries reflected themes of care, balance, and unconditional love, providing a platform for participants to express and connect with the spirit of motherhood.

	 ***PIC: EVENT POSTER***	
5.	**IEEE activities**	The Department of Electrical and Electronics Engineering, in association with the IEEE Student Branch Chapter (SBC60101) of St. Joseph's College of Engineering, organized a workshop titled "Strengthen Her - Work-Life Balance Workshop" on September 26, 2025. The event, held at the Placement Block from 9:30 AM to 10:00 AM, was exclusively designed for returning mothers of the institution. Its objective was to help women professionals manage the dynamics of personal and professional life after a career break.The session was led by Mrs. M. Selvarani, Senior Lead Consultant at Bosch Global Software Technologies and Lead of Cyber Champions. She shared practical strategies to achieve work-life balance while prioritizing personal well-being and career growth. Through interactive discussions, participants reflected on stress triggers and family

	 *PIC: EVENT POSTER & PHOTO*	priorities. The workshop guided them in developing realistic approaches to balance multiple roles with confidence.
6.	**IEEE activities** 	The IEEE Student Branch Chapter of St. Joseph's College of Engineering, in collaboration with the Returning Mothers organization, hosted the International Returning Mother's Day Celebration under the theme "Shakthi". The event honored the strength, resilience, and love of women resuming professional or academic life after motherhood. Carrying the powerful message, "The return of a mother is not a moment, it is a celebration of endless love rediscovered," the program struck a deeply emotional chord. Returning mothers, faculty, and students came together in a warm and inclusive celebration. Interactive sessions provided a safe space to share experiences, build community, and encourage one another. The program also featured a vibrant cultural performance that added festivity and energy to the occasion. The atmosphere was filled with joy, respect, and admiration for the remarkable journey of mothers. The celebration concluded with a group photograph, symbolizing unity and empowerment.

	PIC: EVENT POSTER	"Shakthi" emerged as more than an event it became a platform for awareness, dialogue, and community-building.
7.	**IEEE activities** 	he session featured Ms. Maryam Agbalaya, Researcher, AWS Certified Cloud Practitioner, IT Application Support Engineer, and Customer Support Specialist. She delivered an engaging lecture on the fundamentals and applications of cloud computing. The talk explained how cloud technologies support everyday life, from storage and streaming to collaboration. Ms. Agbalaya also highlighted the wide range of career and research opportunities in this growing field. The session drew 35+ enthusiastic participants, including students and faculty members. Attendees appreciated the clarity of real-world examples shared during the lecture. The interactive Q&A session deepened participants' understanding of cloud computing's role.The event concluded by inspiring students to explore opportunities in this dynamic domain.

	PIC: EVENT POSTER	
8.	**IEEE activities**	The distinguished speaker, Ms. Mary Masamo, MBA, Global Positioning Strategist, Cross-Cultural Negotiation Expert, and Keynote Speaker from Washington, U.S., delivered an impactful session on mastering the art of negotiation. She drew from her rich experience as a former U.S. Government Contracting Officer and global business strategist. Her talk focused on building effective negotiation frameworks that achieve win-win outcomes. Ms. Masamo emphasized influence, clarity, and confidence as vital elements in shaping results. She introduced structured approaches for managing complex discussions and cultural challenges. Strategies for high-stakes decision-making were explained with relatable real-world examples. Her actionable insights resonated strongly with the participants throughout the session. The session inspired attendees to

	 *PIC: EVENT POSTER*	view negotiation as both a business and life skill essential for leadership and collaboration.
9.	**IEEE activities**	The distinguished speaker of the session, Ms. Hiba P Sainudeen, Int. M.Sc Photonics Graduate from Cochin University of Science and Technology, delivered an insightful lecture on the fusion of electronics and photonics. She highlighted the vital role of photonics in shaping the future of faster, smarter, and more efficient technologies. The session attracted 35+ active participants, including students and faculty members, who engaged enthusiastically in the discussion and appreciated the practical knowledge shared by the

	 *PIC: EVENT POSTER*	speaker. The event concluded with an interactive Q&A session, where the audience gained deeper understanding and inspiration to explore emerging innovations in this interdisciplinary field.
10.	**IEEE Activities**	IEEE Power Electronics Society SJCE SB, in collaboration with IEEE Power Electronics Society Madras Chapter PEL35 (CH10352), organized the special event "PELS to Planet: IEEE Day 2025" on September 16, 2025.The session was themed "From Campus to Global Impact A Conversation on IEEE & Opportunities" and delivered by Mr. Aravindhan Anbazhagan, Public Policy Graduate Student at Carnegie Mellon University - Heinz College, IEEE ProComm Bog, and TEDx Speaker. He shared valuable perspectives on IEEE's role in bridging academic learning with global exposure. The talk highlighted various career and research opportunities IEEE provides at the international level. Mr. Aravindhan guided students on how to utilize IEEE platforms to grow as global contributors and leaders. The session enabled participants to understand IEEE's role in connecting academia with worldwide opportunities. Conducted online via Google Meet, it witnessed active participation from 30+ students and faculty members. The interactive discussions reflected keen interest in IEEE's global impact and student growth opportunities.

	 ***PIC: EVENT POSTER***	
11.	**IEEE Activities**	The session was delivered by Prof. Shravani Mathur, Ex-Associate Professor at Oriental College of Technology, Bhopal, and IEEE STEM Champion 2025. She shared her expertise on the rising cyber threats faced by modern power grids. The talk emphasized the urgent need to build resilience in critical infrastructure. Participants gained insights into how cyberattacks can compromise national power systems. Prof. Mathur highlighted effective mitigation strategies to strengthen grid security. She explained practical methods to detect, prevent, and respond to cyber incidents. The online session saw active engagement from students, faculty,

	 ***PIC: EVENT POSTER***	and professionals. Interactive Q&A discussions reflected the growing importance of cybersecurity in the energy sector.
12.	**IEEE Activities**	The session was delivered by Ms. Rushali Thakkar, Chair of the IEEE Benelux Section, Wi P Representative, IEEE PES R8 SYP Leader, and VOLT Graduate. She motivated participants to think beyond conventional approaches and embrace leadership driven by vision, Purpose and innovation. Drawing from her experiences, she offered valuable personal and professional insights. She guided engineers on preparing for the future with forward-looking skills and a socially responsible mind set. Her talk highlighted the significance of mentorship in shaping professional growth. She also emphasized cross-cultural collaboration and adaptability as key traits of future leaders. The online event saw enthusiastic participation from students, faculty, and professionals. Interactive discussions and Q&A underlined the importance of blending leadership qualities with technical expertise.

	 *PIC: EVENT POSTER*	
13.	**Club Activities**	This Vision Rider event started at 6:00 pm to 7:00 pm, via Google meet with all the members of our club and society. The event started exploring the hidden talent of our Student. Abiding the famous quote "Everyone has talent. What's rare is the courage to below it to the dark places where it leads" the event started exploring the hidden talent of our students through this event

	 ***PIC: EVENT POSTER***	
14.	**Club activities**	The Electro visionaries event consisted of one challenging round where participants showcased their technical expertise by solving a complex circuit problem. Students applied their analytical skills and electrical knowledge to arrive at accurate solutions, demonstrating both precision and problem-solving ability. The event highlighted the importance of technical skills, logical thinking, and quick decision-making, fostering a spirit of innovation and healthy competition among participants.

	 *PIC: EVENT POSTER*	
15.	**Club activities**	The NATURENEX event on Environmental Protection consisted of two rounds – Finding Scientific Names of Fruits and Oral Presentation.Participants gained awareness of eco-friendly habits and sustainable lifestyle practices.They explored simple solutions such as water conservation, waste reduction, and using sustainable alternatives.The event highlighted how small daily changes can collectively create a positive environmental impact.It successfully motivated students to adopt and maintain green habits for a healthier planet.

	 ***PIC: EVENT POSTER***	
16.	**ISTE activities**	The TECHTOON – Tech Memes and Comic Strip Competition was organized on 04-09-2025 by the Department of EEE, St. Joseph's College of Engineering.The event was conducted in association with the IEEE Photonics Society under the ISTE Student Chapter. Students showcased creativity by designing tech-related memes and comic strips.The competition fostered networking with experts and like-minded peers.It created valuable opportunities for collaboration and idea-sharing with professionals and students.

	 ***PIC: EVENT PHOTO***	

17.	**STUDENT TRAINING SESSION**  ***PIC: EVENT PHOTO***	As part of Placement Technical Training for JSW, our Assistant Professor, Mr.T.Srianandа Ganesh from the Department of Electrical and Electronics Engineering, conducted an insightful session on the fundamentals of electrical systems and motors. The training emphasized the working principles, basic operations, and practical aspects of these systems, helping us strengthen our core knowledge. This session bridged the gap between theoretical concepts and industrial applications, providing us with a deeper understanding of how electrical and motor systems function in real-world scenarios.
18.	**VALUE ADDED COURSE**  	The Department of Electrical and Electronics Engineering organized five Value-Added Courses for III Year students to enhance their technical expertise and industry readiness. A Total of 175 students benefited, with each course having 35 participants. EVA101 – Modelling and Simulation of Solar PV System EVA104 – Design & Development of Real-Time EV Battery Testing System EVA107 – AI and Optimization Techniques for Electric Vehicles EVA109 – Full Stack Development

	PIC: EVENT PHOTO	EVA110 – Condition Monitoring and Predictive Maintenance using ML
19.	**Faculty Recognition**	Our faculty Dr Jayarama Pradeep, Professor and Head, acted as Jury member in IEEE EU-REKA 2025. Our faculty Mr H Prasad, Assistant Professor, has acted as reviewer for Elsevier Journal – Engineering Applications of Artificial Intelligence. Our faculty Mr.A Sadeesh Kumar, Assistant Professor, has participated in AIORI – 2 Regional Faculty Workshop, conducted by St. Joseph's College of Engineering in association with IEEE India Council and MEITY. Our faculty Dr V Krishnakumar has participated as Faculty Guide in Niral Thiruvizha organized by Govt of Tamilnadu.

20.	**PATENTS PUBLISHED BY FACULTY**	1. Mr.Sreekanth R published a patent titled “Safety Enhancement for Mountain Climbers Using Energy Harvesting Piezoelectric Technology”. 2. Mr. T Sri Ananda Ganesh published a patent titled “Real-time conveyor automation using IOT & ML” 3. Ms.S.P. Vedavalli published a patent titled “IOT based IV bag monitoring system using BLYNK” 4. Mr.Sivakumar S published a patent titled “Cloud-Integrated RFID and Fingerprint–Based Smart Electronic Voting Machine” 5. Dr. V. Krishnakumar published a patent titled “Autonomous Light Pollution Monitoring and Alert System Using TSL2591 Sensor and IoT-Based Data Analytics”. 6. Mr.K Aravindhan published a patent titled “Real time analysis of air quality index using cloud analytics for localized environments.” 7. Mr.A.Sadeesh Kumar published a patent titled “Minimizing Risk: An Integrated System for Earthquake and Landslide Early Warning”. 8. Mr.Elanthirayan R published a patent titled “Design and Fabrication of Lightweight Composite E-Bike for Dual Mobility”. 9. Mr. V. Balasubramanian published a patent titled “Enhanced Battery Performance Evaluation Using ESP8266-Based IoT Solution”
21.	PLACEMENT DETAILS FOR THE MONTH OF SEPTEMBER 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 MBA

SYMPOSIUM ORGANISED:

FENESTRA 2025

A National-Level Management Symposium

St. Joseph's Group of Institutions successfully organized Fenestra 2025, a national-level management symposium that brought together future business leaders, entrepreneurs, and innovators under one roof. The event, held on September 20 at the OMR campus in Chennai, showcased a dynamic blend of intellect, creativity, and practical business acumen.

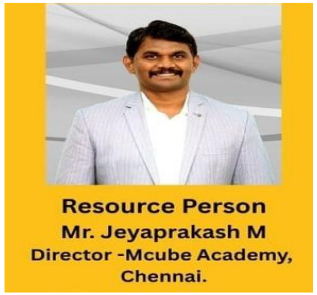
Distinguished guests and corporate leaders graced the occasion, including Mr. Suresh Kayamboo, Vice President – IS/IT at Renault Nissan Technology & Business Centre India, along with alumni representing reputed organizations such as HSBC, TCS, BNP Paribas, Wells Fargo, ICICI Bank, and HDFC Life Insurance Their presence underscored the institution's strong industry connect and commitment to shaping job-ready professionals.

The symposium featured a series of competitive events designed to test participants' problem-solving abilities, financial planning skills, and marketing instincts. Flagship events such as Kaun Banega Businesspati (KBB), Banklyst, Invenzione, Blurb Sprint, and Tackle Talkies offered a diverse platform for students to showcase their talents in areas ranging from business quizzing to design thinking and movie management.

INDUSTRIAL VISITS: 	Organized an industrial visit First-year MBA students to Hindustan Coca-Cola Beverages Pvt. Ltd. The visit provided hands-on exposure to large-scale manufacturing, automated bottling operations, and supply chain workflows.
INDUSTRIAL VISITS: 	Organized an Industrial Visit to The Indian Express, Ambattur, on 25th September 2025 for Second Year MBA students. The visit offered students a first-hand exposure to the functioning of a leading media house and provided valuable insights into the printing, publishing, and distribution processes.

MEMORANDUM OF UNDERSTANDING (MOU) 	The Department of Management Studies, St. Joseph's College of Engineering, is delighted to announce the signing of a Memorandum of Understanding (MoU) with Mcube Academy on 08.09.2025. This collaboration aims to provide students with enhanced learning opportunities, industry exposure, and skill development programs that bridge the gap between academics and industry requirements.
VALUE ADDED COURSES:  	Organized a Value Added Course on Securities Operations and Risk Management for Final Year MBA-Finance students from 1st to 4th September 2025. The sessions were handled by Mr. Glenn Roger Carr, Co-Founder & Director, Finmark Trainers India Pvt. Ltd., who shared his expertise on securities operations, trading mechanisms, and risk management practices in the financial sector. Organized a Value Added Course on Digital Marketing exclusively for MBA Marketing students from 2nd to 4th September 2025. The sessions were aimed at equipping students with practical knowledge of digital platforms, marketing strategies, and emerging industry trends.

VALUE ADDED COURSES:   	Organized a Value Added Course on Supply Chain Management for Final Year MBA-Operations students from 2, 4 & 8th September 2025. The sessions were handled by Mr. K.S. Kamaludeen, Managing Director, Blue Bharath Exim Pvt. Ltd., Chennai who shared his expertise on securities operations, trading mechanisms, and risk management practices in the financial sector. Organized a Value Added Course on Generative AI for Business Leaders for Final Year MBA-Business Analytics students from 2, 4 & 8th September 2025. The sessions were handled by Ms.Madhumathi V, Technical Analyst, Syasaan Career Analytics who provided valuable insights into the applications of Generative AI in business decision-making, data driven strategies, and emerging industry trends. Organized a Value Added Course on Personality Enrichment Programme for the 1st Year MBA students. The programme commenced on 22nd September 2025 .The session aimed at enhancing the personal and professional skills of the students, equipping them with the right mindset, confidence, and communication skills required for future managerial roles.

GUEST LECTURES:   	Guest Lecture on Fundamentals of Securities Market for First Year MBA and Integrated MBA students on 15th September 2025. The session was led by Mr. Jayapal Thangaraj, Plant HR Head, Schwing Stetter India. Guest Lecture on "Be Smart in Business" on 12th September 2025. The session was delivered by Mr. S. Jayaram, Deputy General Manager South & East, Business Standard.
GUEST LECTURES:  	Guest Lecture on "Fundamentals of Securities Market" for the First Year MBA and Integrated MBA students on 15th September 2025. The session was delivered by Mr.Jeyaprakash M, Director – Mcube Academy, Chennai

WORK SHOP ORGANISED:   	Organized an Orientation Program on Data Analytics & Business Intelligence on 23rd September 2025 . The session was led by Mr. Abdul Razak Naidu, a renowned Learning & Development Specialist, Soft Skills Trainer, Leadership Development Facilitator, Executive Communication Coach, and Public Speaking Trainer with expertise in Strategic Management from IIM Kashipur. The orientation focused on the topic “Emerging Job Trends in Analytics and the Evolving Career Opportunities for MBA Graduates.” Organized a One Day Workshop on “Networking & Communication: The Cornerstones of HR Leadership” on 29th September 2025 at the MBA Conference Hall. The session was conducted by Mr. Pandy Alagu Raja, HR Thought Leader and Head – People & Culture, Deluxe.com (Payments & Data Company). The workshop was designed for First Year MBA and Integrated MBA students, focusing on the importance of networking skills, effective communication, and leadership competencies in the HR domain.

FACULTY PUBLICATIONS:	• Dr. R. Satish has published a article on AI enabled Transformational leadership for improving healthcare workforce and performance improvement in the Scopus indexed International Journal of Accounting and Economic Studies, Vol.12, No.2, 2025 • Mr. S. Aravinth has published a research paper on Homomorphic Encryption for Enhanced Cybersecurity Privacy-Preserving Data Processing in Cloud-based Systems in 2025 6th International Conference for Emerging Technology (INCET) ; ISBN: 979-8-3315-3103-4/25;DOI: 10.1109/INCET64471.2025.11140360 • Dr.K.Sampath has presented a paper on An Intelligent Decision Support System for Human Resource Planning Using Fuzzy Logic and AHP Techniques in the Fifth International Conference on "Emerging Research in Electronics, Computer Science and Technology" ICERECT - 2025, Technically sponsored by IEEE Bangalore Section at P. E. S. College of Engineering, Mandya 571 401, during 12th–13th, September 2025. • Dr.R.S. Lekshmi, "Assessing The Efficiency And Impact Of The Revenue Cycle Management (Rcm) Model In Hospitals", International Journal of Accounting and Economics Studies, 2025, pp.154- 158. https://doi.org/10.14419/b1b28k76 • Dr. SP. Karuppiah has published a article on Enhanced medical image analysis using hybrid Henry gas Solubility optimization algorithm with optimized AdaBoost stacked neural networks in the SCI Indexed Expert Systems With Applications Journal. https://doi.org/10.1016/j.eswa.2025.128882

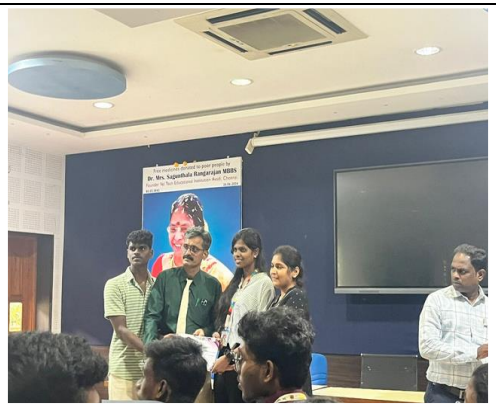
DEPARTMENT OF CHEMICAL ENGINEERING		
S.No.	**Title of the Events and Photographs**	**Details of the Event**
	WORKSHOP	**IEI Student Chapter (Kancheepuram Local Centre, Chapter Code: 60119/SJCE/CH),** organized a workshop on "**Mastering Journal Writing: A Step-by- Step Workshop**" on 2nd September 2025 from 1:00 PM to 3:00 PM at Classroom No. 56. The session was facilitated by **Dr. Amudha T and Dr Magesh N, Assistant Professor**, Department of Chemical Engineering, St. Joseph's College of Engineering, who shared her expertise on research journal writing. She emphasized the importance of academic publishing and provided systematic guidance on structuring research papers.  

	STUDENT ACHIEVEMENT	III Year Chemical Engineering students, **Mr. Lewyn D and Mr. Sam Daniel T,** under the mentorship of **Dr. S. Vinod Kumar, Associate Professor**, have brought laurels to St. Joseph's College of Engineering by winning the **Best Paper Award at the prestigious International Conference on Green and Sustainable Technologies for Materials (ICGSTM 2025), hosted by INTI International University, Malaysia.**  Students from the IV year achieved notable success at the **National Level Hackathon 2025 –Green Hack 2.0**. The team, comprising **Maria Amirta E, Lakeisha S, Kuperan G, Kavinraja Chakravarthy E, and Tejhaswin V P, won the Best Idea Award in the Hardware Edition, earning a cash prize of ₹1,000.** In the Software Edition of the same event, the III-year students— Lewyn

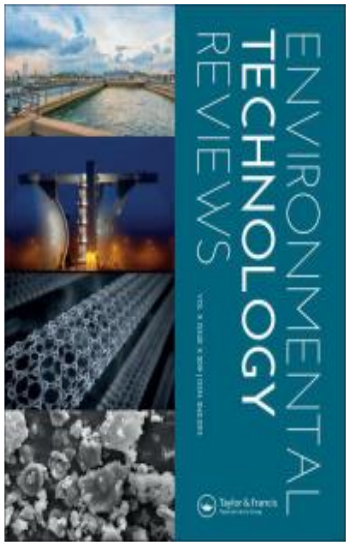
		D, Sam Daniel T, and Raahul Selvam A—secured the Best Idea Award, also receiving a prize of ₹1,000.   The Department of Chemical Engineering, **Hindustan College of Engineering and Technology**, in association with IIChE Student Chapter, organized a **National Level Technical Symposium CHEMERSATZ'25 on 19th September 2025.** Students from IV Year showcased remarkable performance and brought laurels to their institution by securing top prizes. In the Paper Presentation, the **First Prize** was jointly awarded to the teams comprising **Sandeep, Narendran,Syed and Jawahirullah F, Haribalaji,** while **the Second Prize was won by Santhosh K J and Sanjay S.** Demonstrating their technical knowledge and quick thinking, the students also excelled in the **Technical Quiz**, where **Jawahirullah F, Santhosh K J, and Sanjay S clinched the First Prize**, followed by **Haribalaji P. V, Syed Ajmal, Sandeep K, and Narendran V securing the Second Prize**. Their

		outstanding achievements not only reflect their dedication and technical expertise but also highlight the academic excellence and competitive spirit of St. Joseph's College of Engineering.    Outstanding achievements of its students **at Invente'25, the national-level**

		symposium hosted by SSN College of Engineering on 26th and 27th September 2025. The students showcased their technical expertise and problem-solving skills by winning accolades across various events. In the Industrial Auction, **the First Prize was secured by S. Vivesh, V. Lithesh, K. Suthir, and M. Tamilzhrasan**, while **P. Devika clinched the Second Prize in Maragatha Naanayam.** Demonstrating excellence in technical competitions, **P. Abarna and S. Logeshwari emerged champions by winning First Prizes in both Freeze the Reaction and Treasure Hunt, each carrying a cash award of ₹2000.** Further, in the Chemical Cinematic Universe, **M. Tamilzhrasan and V. Lithesh bagged the Third Prize, and in Freeze the Reaction, M. Jasper Jayathilakan and S. Srivathsan secured the Third Prize.** Adding to the department's glory, the team Nobles of Nature, comprising **V. V. Sharan Deepak and Riswanth Y., won Second Place in the Paper Presentation event,** reflecting their innovative approach and research potential. These achievements highlight the dedication, competitive spirit, and academic excellence of the Department, bringing laurels to St. Joseph's College of Engineering.  

		 
	VALUE ADDED COURSE	The first course, conducted from **1st to 8th September 2025**, was exclusively designed for **final-year Chemical Engineering students**. The sessions were led **by Dr. Affrose from iGenuine**, who delivered comprehensive lectures and hands-on demonstrations on **Cheminformatics**, enabling students to gain practical insights into computational chemical analysis. A second Value Added Course from **15th to 19th September 2025** for third-year students. The same expert team handled this session, expanding the course's focus to include **Optimization Tools and Molecular Design Tools,** in addition to **Cheminformatics.** Both programs received enthusiastic participation from students and were commended for effectively bridging theoretical knowledge with practical applications in modern chemical engineering.

		 
	PUBLICATIONS(ONLY PUBLISHED) DETAILS	**Dr. N. Venkatesh, Professor and Head**, St. Joseph's College of Engineering, has added a prestigious feather to the Department's cap through his recent international research contribution. He co-authored a review article titled "**A Critical Review on Green Synthesis of Copper Oxide Nanoparticles:**

		Characterization and its Application in Wastewater Treatment" in the reputed journal **Environmental Technology Reviews (Taylor & Francis, ISSN: 2162-2515)**, published online on 25th August 2025.   A critical review on green synthesis of copper oxide nanoparticles: characterization and its application in wastewater treatment **Dr. S. Vinod Kumar, Associate Professor**, has achieved a significant research milestone with the publication of his patent titled "**Secure Data Transmission Protocol for IoT Devices Using Adaptive Spread Spectrum Techniques**." The patent, published in The Patent Office Journal No. 39/2025 dated 26 September 2025, focuses on creating a secure, energy-efficient, and adaptive communication protocol for Internet of Things (IoT) environments. **Dr. S. Sujatha, Assistant Professor**, has been recognized for her contribution to a published patent titled "Secure Data Transmission Protocol for IoT

		Devices Using Adaptive Spread Spectrum Techniques," featured in The Patent Office Journal No. 39/2025 dated 26 September 2025. **Dr. R. Sivaranjanee, Assistant Professor**, has achieved a remarkable milestone as a co-inventor in a patent published in The Patent Office Journal No. 39/2025 dated 26 September 2025, titled "Secure Data Transmission Protocol for IoT Devices Using Adaptive Spread Spectrum Techniques." 
	FDP/ CONFERENCE/ WORKSHOP (ATTENDED BY STAFF)	**Dr. Renuka Viswanathan, Professor**, has successfully completed a **One Week Online Short Term Course on "Techno Economic Analysis"** organized by the Chennai Research Foundation, held from **30th July to 3rd August 2025.** **Ms. R. Lavanya, Assistant Professor in the Department of Chemical Engineering,** proudly represented her Department and institution by presenting a research paper at the **Fifth International Conference on Emerging Research in Electronics, Computer Science and Technology (ICERECT-2025) held at P.E.S. College of Engineering, Mandya, on September 12th–13th, 2025.**

		 
	INDUSTRIAL VISIT FOR COLLABORATION	**Dr. S. Sujatha,** Assistant Professor visited **Amara Raja Energy and Mobility Ltd., Karakambadi, Tirupati,** on 18th September 2025 as part of the Industry–Institute Interaction initiative. The visit aimed to strengthen collaboration and promote innovation between academia and industry. During the interaction, **Dr. Sujatha met Mr. Nagarajulu Naidu, General Manager**, and discussed potential avenues for partnership, knowledge exchange, and future collaborative opportunities.

		  **Dr. V. Renuka, Professor,** Department of Chemical Engineering, St. Joseph's College of Engineering, visited the Water Treatment Plant at Selva Stone, Bargur. The visit was aimed at strengthening ties between academia and industry, exploring opportunities for student engagement, and understanding the operational challenges faced in industrial water treatment processes. During the visit, **Dr. Renuka met Mr. Durai,** Managing Director of Selva Stone, and held detailed discussions on industrial problem statements, student placements, and project collaborations. The conversation emphasized the significance of practical exposure for students and the benefits of integrating industrial practices into academic learning.

		
	ALUMNI MOCK INTERVIEW	Mock Interview session for the **final-year Chemical Engineering students on 27th September 2025**. The session was designed to provide students with a simulated interview experience that closely reflects real placement scenarios, thereby enhancing their readiness for upcoming campus recruitment drives. A total of 10 distinguished alumni from both core industries and the software sector graciously participated in the initiative. These alumni, with diverse professional backgrounds, not only conducted the interviews but also shared their practical insights, career experiences, and valuable suggestions. Their presence created a unique opportunity for students to interact directly with professionals who had once walked the same

		mcorridors and have now established themselves successfully in their respective domains.    

	NPTEL COURSE COMPLETED **(BY FACULTY)**	**Dr. N. Venkatesh, Professor and Head of the** has successfully completed the NPTEL certification course on "**Selection of Nanomaterials for Energy Harvesting and Storage Application" conducted by IIT Roorkee during July–August 2025. He secured the Elite Certification with a remarkable consolidated score of 81%.** **Dr. R. Sivaranjanee, Assistant Professor**, has successfully completed the NPTEL certification course on "**Energy Conversion Technologies (Biomass and Coal)" conducted by IIT Guwahati** during July–September 2025. She earned the Elite Certification with a consolidated score of 62%.  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  Elite NPTEL ONLINE CERTIFICATION (Funded by the MoE, Govt. of India) Skill India This certificate is awarded to DR SIVARANJANEE R for successfully completing the course Energy Conversion Technologies (Biomass and Coal) with a consolidated score of 62 % Online Assignments 22.92/25 | Proctored Exam 39.4/75 Total number of candidates certified in this course: 221 Jul-Sep 2025 (8 week course) Dr. Salil Kashyap Coordinator, Centre for Educational Technology, IIT Guwahati Indian Institute of Technology Guwahati swayam Roll No: NPTEL25CH79S53300976 To verify the certificate No. of credits recommended: 2 or 3

	ACADEMIC AUDIT	Academic Audit for the academic year 2025–2026 on 26th September 2025 as part of its continuous quality improvement initiative. The audit was carried out by distinguished experts: **Dr. P. Gomathi Priya, Professor**, Department of Chemical Engineering, **A. C. Tech, Anna University.** **Dr. S. Karthick Raja, Professor**, **SIMATS School of Engineering**. The primary aim of the academic audit was to assess the effectiveness of the teaching– learning process, evaluate the extent of outcome-based education implementation, and ensure that the academic standards of the Department are in line with institutional goals and global best practices.   

	ALUMNI TALK	The session was titled "**Learning from Mistakes: Personal Experiences from Alumni Journeys**" and was delivered by **Mr. Naresh, Graduate Engineer Trainee at Tagrose Chemicals, Cuddalore.** Mr. Naresh, an alumnus of the department, shared his real-life experiences and highlighted the importance of learning from mistakes during both academic and professional journeys. He emphasized how challenges faced during the early career stages can be turned into valuable learning opportunities, helping students build resilience and confidence.  

	SPORTS	Mr. Arun Vignesh and Mr. Shree Karthikeyan, students of III Year, who were part of the St. Joseph's College of Engineering Handball Team that emerged as Winners in the Zonal Handball Tournament. 

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DEPARTMENT OF SCIENCE

Sl. No.	Events	Remarks
1	**Collabarative Quality initiatives with other institutions**	1. Dr. S. Suresh had delivered an invited talk on "Universal Human Values" in the "Human Values Induction program" organized by "Mohamed Sathak AJ College of Engineering, Chennai" on 01.09.2025. 2. Dr. S. Krishnan rendered his service as a Jury member for the presentations delivered in "International Conference on Modern Functional Materials (ICMFM 2025) organized by "Sri Sairam College of Engineering, Chennai", on 11.09.2025 & 12.09.2025.
2	**Industrial Visits,Inplant Training,Internships**	1. Dr. S. Suresh has completed a translation consultancy work for NPTEL-IITM for the course titled "Applied Ergonomics" worth of Rs. 13,125 on 23.09.2025
3	**Guest Lecture**	-
4	**FDP/Workshop/Conference**	***ATAL FDP*** 1. Mr. S. Kaleel Mohamed Ibrahim had attended an ATAL (online mode) Faculty Development Programme titled " Semiconductor Design for Real world", held from 15.09.25 to 20.09.25, organized by "Bannari Amman Institute of Technology, Sathiyamangalam". 2. Dr. N.R. Rajagopalan, had attended an online ATAL Faculty Development Programme titled " Recent Advances and Applications of Manufacturing in

		Industry 4.0", held from 22.09.25 to 27.09.25, organized by "V V College of Engineering, Thirunelveli". ***Other FDPs:*** 1. Dr. A. Mahalakshmi had attended online Faculty Development Program on " Mastering Digital Pedagogy: Tools, Techniques, and Content Creation Strategies " held from 15.09.25 to 20.09.25, conducted by "Indira Ganesan Institutions, Trichy". ***Workshops:*** 1. Dr. P. Krishnan had attended workshop on " Editorial Integrity and Innovation: Navigating Medical Publishing in the Indian Context." held on 20.09.25 conducted by "Scientific Scholar Publishers."
9	**Awards/Prize won by students / Staff**	1. Dr. P. Krishnan received the "Excellence in Nanoscience Innovation" awarded by the Australian Awards committee on 19.09.2025. 2. NPTEL Certifications have been received by the following staff members on 28.09.2025 Title : Energy Conversion Technologies 1. Dr. A. Arulmozhi – Elite 2. Dr. V. Swarnalatha – Elite 3. Dr. A. Mahalakshmi – Elite 4. Dr. J. Sharmila – Elite 5. Ms. S. Savitha – Silver + 5% Topper Title : Solar Photovoltaics Fundamentals, Technology and Applications 1. Dr. G. Senthil Murugan – Elite

10	**Industrial Projects done by students**	-
11	**Publications(only published) details**	***Journal Publications:*** 1. Dr. P. Saravanan has published a research article titled "Nanocatalytic upcycling of plastic waste: Advances in selective conversion technologies for sustainable high-value products recovery" in the "Results in Engineering", 28 (2025) 107402. 2. Dr. P. Saravanan has published a research article titled "Review on sequential catalysis for higher alcohols: overcoming barriers in direct CO_2 hydrogenation" in the journal of "Green Chemistry," (2025) doi: 10.1039/d5gc03160e 3. Dr. N.R. Rajagopalan has published a research article titled "Investigation of the Optical, Thermal, Dielectric, Electrical, and Impedance Features of Zinc-Doped Urea-L-Malic Crystals" in the journal of "Physics of the Solid State," 67 (2025) 858-866. 4. Dr. N. Punitha has published a research article titled "Structural, hirshfeld surface, DFT, spectroscopic, and nonlinear optical properties of (E)-2-(3-Ethoxy-4-hydroxybenzylidene) hydrazinecarboxamide" in the "Journal of Molecular Structure, 1349 (Sep 2025) 143825. 5. Dr. K. Jayamoorthy has published a research article titled "Ni-doped ZnS nanoparticles encapsulated in polypropylene glycol: exploring synthesis, structural integrity, optical behavior and thermal stability" in the journal "Materials Science: Materials in Electronics" 36 (2025) 1580. 6. Dr. K. Jayamoorthy has published a research article titled "Improved corrosion resistance of mild steel with poly (vinyl pyrrolidone) incorporated zinc phosphate coating" in the "Journal of the Taiwan Institute of Chemical Engineers" 178 (Sep

		2025) 106363. 7. Dr. S.M. Prakash has published a research article titled "Assessment of soil and groundwater contamination due to E-waste disposal using geospatial technique" in the "International Journal of Environmental Sciences Journal", 11 (2025) 8s. 8. Dr. K. Satheshkumar has published a research article titled "Effect of Pr doping concentration on optical, antibacterial and photocatalytic properties of ZnO Nanoparticles." in the journal "Semiconductors," 59 (2025) 888-899. 9. Dr. C. Chandrasatheesh has published a research article titled "Effect of Pr doping concentration on optical, antibacterial and photocatalytic properties of ZnO Nanoparticles." in the journal "Separation & Purification Technology" 380 (2025) 135332. ***Patents*** Dr. T.L. Ajeesha has published a patent titled "Self-healing road surface using nano-chemical agents" in the "Official Journal of the Patent Office – Journal issue 39/2025" Application number 202541084054 – dated 26-09-2025. ***Reviewers:*** 1. Dr. S. Suresh – Current Organic Chemistry 2. Dr. N.R. Rajagopalan – Optik 3. Dr. K. Jayamoorthy – Journal of Molecular Structure, Current Organic Chemistry, Measurements 4. Dr. B. Subash – Current Analytical Chemistry, Journal of Hydrogen Energy, Current Organic Chemistry

		5. Dr. K. Dhanaraj - Journal of ChemPhys Matter
13	**Other activities(if any)**	1. An alumni talk session has been arranged by the Department of Science on 26.09.25. Mr. Andrew David Bhagyam (2012-16 ECE batch), Sr. Privacy Product Manager, Microsoft interacted with the first-year students on the topic of “Wired for Success: Bits and Bytes, Career Bright”

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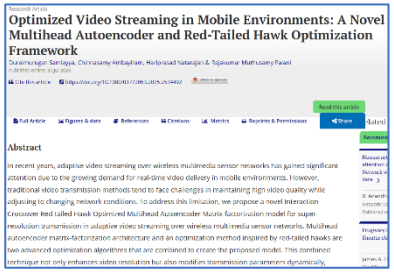
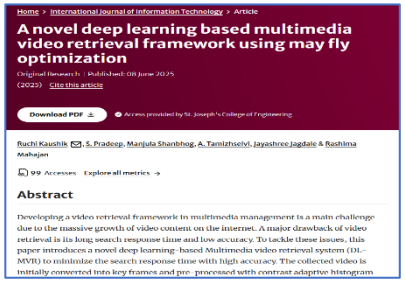
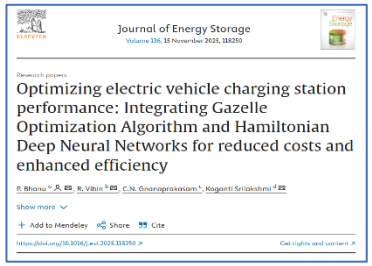
DEPARTMENT OF INFORMATION TECHNOLOGY

	Photographs Captured During Event/Screenshot	Corresponding remarks in regarding the status of activity execution
1.	 **Co-Author** **Dr. S Duraimurugan,** published a paper indexed in	**Staff Publication** **S Duraimurugan**; A Chinnasamy, H Natarajan, Hariprasad R, Muthusamy Palani, Rajakumar**,** "Optimized Video Streaming in Mobile Environments: A Novel Multihead Autoencoder and Red-Tailed Hawk Optimization Framework", IETE Journal of Research, DOI: 10.1080/03772063.2025.2534492. **(Indexed in SCIE)** **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. 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.

2.	 Home > International Journal of Information Technology > Article **A novel deep learning based multimedia video retrieval framework using may fly optimization** Original Research | Published: 08 June 2025 (2025) Cite this article Download PDF Access provided by St. Joseph's College of Engineering Ruchi Kaushik, S. Pradeep, Manjula Shanbhog, A. Tamizhselvi, Jayashree Jagdale & Rashima Mahajan 99 Accesses Explore all metrics **Abstract** Developing a video retrieval framework in multimedia management is a main challenge due to the massive growth of video content on the internet. A major drawback of video retrieval is its long search response time and low accuracy. To tackle these issues, this paper introduces a novel deep learning–based Multimedia video retrieval system (DL–MVR) to minimize the search response time with high accuracy. The collected video is initially converted into key frames and pre–processed with contrast adaptive histogram **Co-Author** **Dr A Tamizhselvi,** published a paper indexed in	R., Kaushik, Ruchi; S., Pradeep, S.; M., Shanbhog, Manjula; **A., Tamizhselvi**, A.; J.B., Jagdale, Jayashree B.; R., Mahajan, Rashima (2025). A novel deep learning based multimedia video retrieval framework using may fly optimization, International Journal of Information Technology (Singapore), Publisher : Springer Science and Business Media B.V., DOI:10.1007/s41870-025-02587-w, ISSN: 25112104. **(Indexed in Scopus)** **Abstract:** Developing a video retrieval framework in multimedia management is a main challenge due to the massive growth of video content on the internet. A major drawback of video retrieval is its long search response time and low accuracy. To tackle these issues, this paper introduces a novel deep learning-based Multimedia video retrieval system (DL-MVR) to minimize the search response time with high accuracy. The collected video is initially converted into key frames and pre-processed with contrast adaptive histogram equalization to remove noise artifacts thereby improving image quality. After pre-processing, the images are fed to Efficient Net to extract patch features. Finally, to retrieve the similar video, matching is done using may fly optimization (MFO), that compares the query frame features to the video database. Several performance metrics are analysed to measure the effectiveness of the proposed strategy in terms of accuracy and response time. Experimental results indicate that the proposed system has a search response time of 0.71 s, which is lower than existing methods. The proposed DL-MVR method achieves 99.26% of accuracy. The proposed method improves the overall accuracy by 9.32%, 22.04%, and 19.40% which is better than CNN-AlexNet (convolutional neural network), Pyramid regional graph network and CBVR respectively.

3.	 **Co-Author** **Dr Gnanaprakasam, C.N.,** published a paper indexed in	Bhanu, P., Vibin, R, **Gnanaprakasam, C.N.,** Koganti Srilakshmi, "Optimizing electric vehicle charging station performance: Integrating Gazelle Optimization Algorithm and Hamiltonian Deep Neural Networks for reduced costs and enhanced efficiency", ISSN : 2352152X, Publisher: Elsevier Ltd, Publication year 2025, Journal of Energy Storage, Volume 136, Article number 118250, DOI:10.1016/j.est.2025.118250. **(Indexed in Scopus)** **Abstract:** Plug-in electric vehicles (PEVs) have become increasingly popular due to the quick development of battery technology and the growing need to reduce greenhouse gas emissions. This underscores the necessity of optimizing the performance of EV charging stations in order to facilitate this transition. This manuscript proposes an integrated technique for optimizing electric vehicle charging station performance. The major aim of this proposed strategy is to reduce investment costs, increase the profitability of the charging station, and enhance its overall efficiency. By then, the efficacy of the proposed hybrid approach is excluded and compared to other existing approaches in the MATLAB platform, such as the deep deterministic policy gradient algorithm (DDPGA), traditional optimization algorithm (TOA) and particle swarm optimization (PSO). The proposed approach achieves a low cost of $0.70 and a higher efficiency of 97 % contrasted to other existing techniques additionally the proposed GOA-HDNN achieves the lowest run time of 0.68 s and the highest error reduction of 85 %, outperforming TOA, PSO, and DDPGA. These results indicate a substantial reduction in energy losses and financial overhead, which are critical factors for scaling EV infrastructure. Consequently, the framework demonstrates strong applicability for real-world deployment particularly in smart grid environments and industrial-scale EV charging stations.
4.		**Staff Conference Publication** Bharti, Meetali, Monica C.L, **Thresa Jeniffer J**., Giri Babu K., Srinivasa K., "LSTM and XGBoost Hybrid Model for Forecasting Agricultural Productivity and Economic Viability in Intercropping Systems",

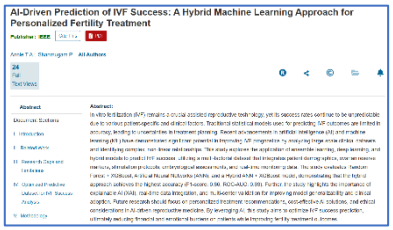
Authors

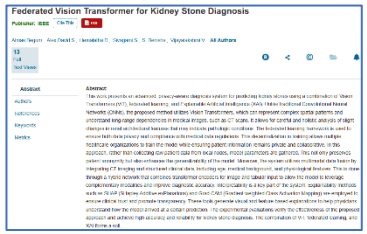
Dr. Thresa Jeniffer J, Published a paper in Scopus indexed Conference

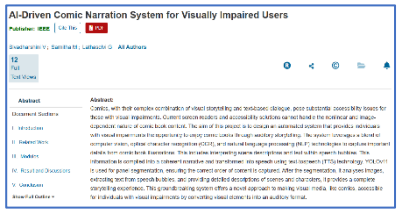
Proceedings of 2025 2nd International Conference on Cognitive Robotics and Intelligent Systems, ICC - ROBINS 2025Conference Paper2025, DOI: 10.1109/ICC-ROBINS64345.2025.11086167, National Institute of Science Communication and Policy Research, New Delhi, India. **(Indexed in Scopus)**

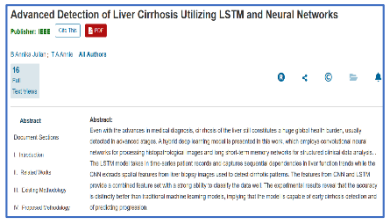
Abstract:

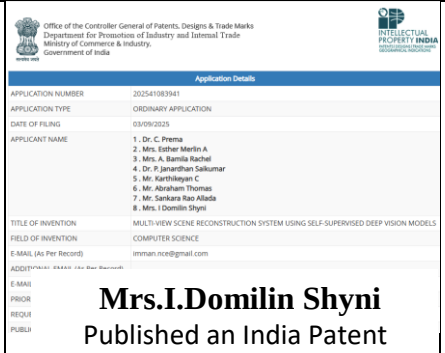
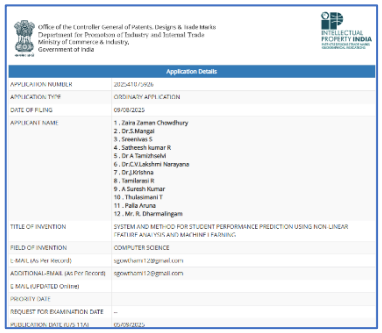
Conventional agricultural forecasting models frequently show low prediction accuracy, extended execution times, and suboptimal resource utilisation in intercropping systems. This research presents a hybrid model combining LSTM and XGBoost to improve agricultural production predictions and economic viability evaluation. The suggested model surpasses conventional approaches, achieving 98.7% accuracy, 0.42 RMSE, and 27% cost reduction, while significantly enhancing execution speed (1.8s) and energy efficiency (31%). Utilising deep learning and gradient boosting, the model delivers accurate crop production forecasts, equipping farmers with real-time information for enhanced decision-making and sustainable land management. When compared to the conventional forecasting methods, the suggested model adeptly manages nonlinear dependencies, seasonal fluctuations, and complex intercropping patterns, making it exceptionally adaptable to evolving agricultural environments. This research enhances the sector by providing a high-performance AI-driven solution, facilitating future breakthroughs in smart farming.

5.	 AI-Driven Prediction of IVF Success: A Hybrid Machine Learning Approach for Personalized Fertility Treatment **Co-Author** **Ms. Annie T A** Published a paper in Scopus	**Annie T A**; Shanmugam P, "AI-Driven Prediction of IVF Success: A Hybrid Machine Learning Approach for Personalized Fertility Treatment," 2025 11th International Conference on Communication and Signal Processing (ICCSP), Melmaruvathur, India, 2025, pp. 666-671, doi: 10.1109/ICCSP64183.2025.11088627. **(Indexed in Scopus)** **Abstract:** In vitro fertilization (IVF) remains a crucial assisted reproductive technology, yet its success rates continue to be unpredictable due to various patient-specific and clinical factors. Recent advancements in artificial intelligence (AI) and machine learning (ML) have demonstrated significant potential in improving IVF prognostics by analyzing large-scale clinical datasets and identifying complex, non-linear relationships. The study evaluates Random Forest + XGBoost, Artificial Neural Networks (ANN), and a Hybrid ANN + XGBoost model, demonstrating that the hybrid approach achieves the highest accuracy (F1-score: 0.86, ROC-AUC: 0.93). Further, the study highlights the importance of explainable AI (XAI), real-time data integration, and multi-center validation for improving model generalizability and clinical adoption. Future research should focus on personalized treatment recommendations, cost-effective AI solutions, and ethical considerations in AI-driven reproductive medicine. By leveraging AI, this study aims to optimize IVF success prediction, ultimately reducing financial and emotional burdens on patients while improving fertility treatment outcomes.

6.	 **Co-Author** **Dr. S. Benisha** Published a paper in Scopus	Almas Begum; Alex David S; Hemalatha D; Sivagami S**; S. Benisha**; Vijayalakshmi V, "Federated Vision Transformer for Kidney Stone Diagnosis," 2025 3rd International Conference on Self Sustainable Artificial Intelligence Systems (ICSSAS), Erode, India, 2025, pp. 252-257, doi: 10.1109/ICSSAS66150.2025.11080948. **(Indexed in Scopus)** **Abstract:** Explainable AI (XAI) has significant implications for the healthcare industry, where trust, accountability, and interpretability are crucial factors for the adoption of artificial intelligence. XAI techniques in healthcare aim to provide clear and understandable explanations for AI-driven decisions, helping healthcare professionals, patients, and regulatory bodies to better comprehend and trust the AI models' outputs. Explainable AI in the Healthcare Industry presents a comprehensive exploration of the critical role of explainable AI in revolutionizing the healthcare industry. With the rapid integration of AI-driven solutions in medical practice, understanding how these models arrive at their decisions is of paramount importance. The book delves into the principles, methodologies, and practical applications of XAI techniques specifically tailored for healthcare settings. Explainable AI in the Healthcare Industry presents a comprehensive exploration of the critical role of explainable AI in revolutionizing the healthcare industry. With the rapid integration of AI-driven solutions in medical practice, understanding how these models arrive at their decisions is of paramount importance. The book delves into the principles, methodologies, and practical applications of XAI techniques specifically tailored for healthcare settings.

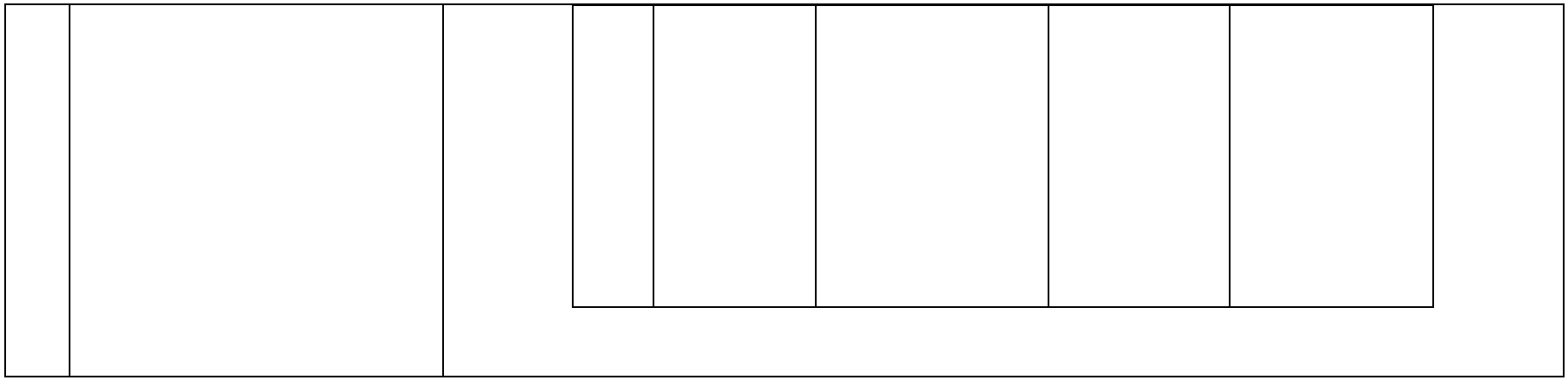
7.	 **Authors** **J. Divya, D. Divyashri and R. Aasiga** Published a paper in Scopus indexed Conference	**Staff - Student Conference Publication** **J. Divya, D. Divyashri and R. Aasiga,** "CTC Loss-Based OCR Model for Efficient Text CAPTCHA Recognition", 2025 6th International Conference on Recent Advances in Information Technology (RAIT), Dhanbad, India, 2025, pp. 1-6, doi: 10.1109/RAIT65068.2025.11088923. **(Indexed In Scopus)** **Abstract:** CAPTCHAs are widely employed to safeguard systems against automated bots by differentiating human interactions from machine activities. They exist in various formats, including text, audio, video, and image-based challenges, with text-based tests being the most prevalent. These rely heavily on Optical Character Recognition (OCR) technology but often pose significant challenges due to the distorted or complex characters designed to mislead bots. Recent advancements have leveraged machine learning and neural networks, particularly the BiConvLSTM algorithm, which effectively combines convolutional layers for feature extraction and bidirectional Long Short-Term Memory (LSTM) layers for sequential data processing. This study introduces an OCR-based approach for text CAPTCHA recognition, employing Connectionist Temporal Classification (CTC) loss to improve model performance. Trained and tested on a publicly available dataset containing 1070 CAPTCHA images, the BiConvLSTM model achieves a character-level accuracy of 99.85% and a word-level accuracy of 97%. The model demonstrates enhanced accuracy over existing solutions, providing a robust framework for reinforcing security systems against automated threats and improving CAPTCHA recognition capabilities.

8.	 **Authors** **B. Annika Julian and T. A. Annie** Published a paper in Scopus	**B. Annika Julian and T. A. Annie,** "Advanced Detection of Liver Cirrhosis Utilizing LSTM and Neural Networks," 2025 11th International Conference on Communication and Signal Processing (ICCSP), Melmaruvathur, India, 2025, pp. 1685-1690, doi: 10.1109/ICCSP64183.2025.11088752. **(Indexed in Scopus)** **Abstract** Even with the advances in medical diagnosis, cirrhosis of the liver still constitutes a huge global health burden, usually detected in advanced stages. A hybrid deep learning model is presented in this work, which employs convolutional neural networks for processing histopathological images and long short-term memory networks for structured clinical data analysis. The LSTM model takes in time-series patient records and captures sequential dependencies in liver function trends while the CNN extracts spatial features from liver biopsy images used to detect cirrhotic patterns. The features from CNN and LSTM provide a combined feature set with a strong ability to classify the data well. The experimental results reveal that the accuracy is distinctly better than traditional machine learning models, implying that the model is capable of early cirrhosis detection and of predicting progression.
9.	 **Authors** **Ms Janani M; Pavithra S; Meena K** Published a paper in Scopus	**Ms Janani M; Pavithra S; Meena K,** "Automated Identification of Offensive Language in Code-Mixed Social Media Content using a Hybrid VNN-BERT Model," 2025 5th International Conference on Expert Clouds and Applications (ICOECA), Bengaluru, India, 2025, pp. 86-93, doi: 10.1109/ICOECA66273.2025.00026. **(Indexed in Scopus)** **Abstract** The increased influence of social media platforms has transformed the way of communication and interaction with people globally. These platforms allow people to express their emotions, opinions, criticism, etc. The ability to connect with people easily is also said to hurt people's lives. Social media also covers the use of harsh words and hate speech which can have serious negative consequences, ranging from psychological harm to inciting violence and discrimination. Hence an automated approach is needed to detect offensive speech. Several deep learning and Natural Language Processing (NLP) techniques have been investigated in previous research to identify objectionable language in multilingual languages, and the results showed promising results. In order to find a single pre-trained

		model that is efficient for detecting hate speech and offensive content (HOS), the paper investigates multilingual transformer-based embedding models utilizing BERT. The classification of abusive speech is done using a hybrid model that combines the Vanilla Neural Network (VNN) with Bidirectional Encoder Representations from Transformers (BERT). The research develops effective machine-learning models to identify offensive language and hate speech in Tamil with an F1 score of 0.89.
10	 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 Application Details APPLICATION NUMBER 202541083941 APPLICANT NAME 1 . Dr. C. Prema 2 . Mrs. Esther Merlin A 3 . Mrs. A. Bamila Rachel 4 . Dr. P. Janardhan Saikumar 5 . Mr. Karthikeyan C 6 . Mr. Abraham Thomas 7 . Mr. Sankara Rao Allada 8 . Mrs. I Domilin Shyni TITLE OF INVENTION MULTI-VIEW SCENE RECONSTRUCTION SYSTEM USING SELF-SUPERVISED DEEP VISION MODELS FIELD OF INVENTION COMPUTER SCIENCE E-MAIL (As Per Record) imman.nce@gmail.com **Mrs.I.Domilin Shyni** Published an India Patent	**Title of the invention:** Multi View Science Reconstruction System Using Self Supervised Deep Vision Models **Name of Inventor:** 1 . Dr. C. Prema 2 . Mrs. Esther Merlin A 3 . Mrs. A. Bamila Rachel 4 . Dr. P. Janardhan Saikumar 5 . Mr. Karthikeyan C 6 . Mr. Abraham Thomas 7 . Mr. Sankara Rao Allada 8 . **Mrs. I Domilin Shyni** **Patent Application Number:** 202541083941 **Date of filing of Application:** :03/09/2025 **Publication Date:** 26/09/2025
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 Application Details APPLICANT NAME 1 . Zaira Zaman Chowdhury 2 . Dr.S.Mangai 3 . Sreenivas S 4 . Satheesh kumar R 5 . Dr A Tamizhselvi 6 . Dr.C.V.Lakshmi Narayana 7 . Dr.J.Krishna 8 . Tamilarasi R 9 . A Suresh Kumar 10 . Thulasimani T 11 . Palla Aruna 12 . Mr. R. Dharmalingam TITLE OF INVENTION SYSTEM AND METHOD FOR STUDENT PERFORMANCE PREDICTION USING NON-LINEAR FEATURE ANALYSIS AND MACHINE LEARNING FIELD OF INVENTION COMPUTER SCIENCE **Dr.A.Tamizhselvi** Published an India Patent	**Title of the invention:** System and Method for Student Performance Prediction Using Non-Linear Feature Analysis and Machine Learning **Name of Inventor:** 1 . Zaira Zaman Chowdhury 2 . Dr.S.Mangai 3 . Sreenivas S 4 . Satheesh kumar R 5 . **Dr A Tamizhselvi** 6 . Dr.C.V.Lakshmi Narayana 7 . Dr.J.Krishna 8 . Tamilarasi R 9 . A Suresh Kumar

		10 . Thulasimani T 11 . Palla Aruna 12 . Mr. R. Dharmalingam **Patent Application Number:** 202541075926 **Date of filing of Application:** 09/08/2025 **Publication Date:** 05/09/2025
12.	 **Sample FDP Certificate**	**Seminar/ FDP Attended by Faculty**

S.No	Title of the topic	Name of the Staff	Conducted By	Date
1	Power BI	Mrs.JeyaPriya Mr.Sirenjeevi	ICT Academy	16-09-25 to 20-9-25(5 days)
2	Advancing Energy Solutions for a Sustainable Future	Dr.Gnanaprakasam C N	ATAL FDP	22-9-25 to 27-9-2025 (6 days)
3	Next-Gen Intelligence: AI Applications in Industry, Academia, and Beyond	Dr.Gnanaprakasam C N	ATAL FDP	8-9-25 to 13-9-25 (6 days)



DEPARTMENT OF MATHEMATICS AND ENGLISH

Events | **Remarks**

FDP/Workshop/Conference

S.No	Staff Name	Program Title / Event	Organized by	Date
1	Dr. G. Venkat Narayanan	Next-Gen Intelligence: AI Applications in Industry, Academia, and Beyond	St.Joseph's Institute of Technology	08-09-2025 to 13-09-2025
2	Dr. S. Aruna			
3	Mr.S.M.Balaji	Emerging Technologies and trends of future Energy-2030 (online FDP)	St.Joseph's College of Engineering	15-09-2025 to 20-09-2025
4	Dr. M. Akash			
5	Dr. M. Akash	Mathematics for Sustainable Development in Research	St. Joseph's College (Arts & Science)	24-09-2025 to 29-09-2025

S.No	Staff Name	NPTEL Course Name	Organized by	
1	Dr. G. Purushhothaman	Calculus for economics, commerce and management	IIT Bombay	July- Oct 2025
2	Dr. G.Venkat Narayanan	Calculus of One Variable	IIT Kanpur	July- Oct 2025

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