We Make You Shine

St. JOSEPH'S INSTITUTE OF TECHNOLOGY

(An Autonomous Institution)

St. JOSEPH'S GROUP OF INSTITUTIONS

OMR, CHENNAI - 119

Approved by AICTE, New Delhi and Permanently Affiliated to Anna University

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

We Exist Everywhere

TOP NEWS

PROFESSIONAL CHAPTER ACTIVITIESTIES

ALUMNI TALK

PARENT-TEACHER MEETING

WORKSHOP

PATTAYAM

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FACULTY ACHIEVEMENTS

STUDENT ACHIEVEMENTS

NEXTGEN NEWS

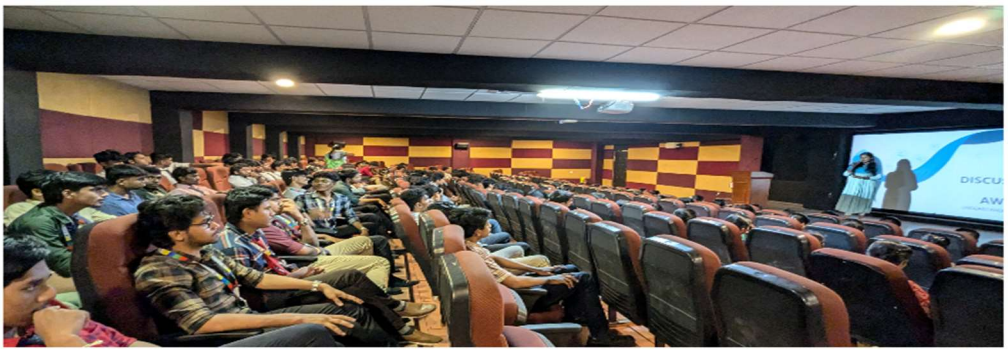
October 2024

Professional Chapter Activity - IEEE Computer society

The Department of Computer Science and Engineering successfully completed IEEE Day Event on the 9th and 10th October 2024. The event featured a Workshop on Idea Generation and the much-anticipated Project Expo '24, both of which were enthusiastically attended by 1st and 2nd-year CSE students. The workshop provided valuable insights into fostering creativity and innovative thinking. Mr. Mohan HR, the esteemed IEEE Ambassador and Chair of Events at IEEE CS Madras, was the chief guest and shared his expertise on project development and idea incubation. Day 1 and day 2 was a resounding success, with students actively participating in discussions and project presentations, setting a strong tone for the following day of activities.

Alumni Talk

The Department of Computer Science & Engineering organized an engaging Alumni Talk on "Dream it, build it: Secrets to transforming ideas into Reality" on 4th, October 2024. The event featured Ms. kanmani, a managing Director kanmani Pre-school, Navalur and an esteemed alumna from the Batch of 2020-2024. Held in AV Hall-1 from 8:15 to 9:30 AM, the talk was specifically aimed at II-year students, offering them a deep dive into the practical aspects of entrepreneurship Ms. kanmani shared her entrepreneur journey, her experiences, and valuable insights, providing students become an entrepreneur. The session was well-attended and highly appreciated by students, who gained a better perspective on how to align their academic learning towards to become entrepreneur.



Parent-Teacher Meeting

A Parent-Teacher Meeting was held at the Department of Computer Science and Engineering, St. Joseph's Institute of Technology on 14.10.2024. The meeting provided an opportunity for faculty and parents to discuss students' academic progress, college policies, and development plans aimed at enhancing student learning. A total of 127 students parents attended the meeting. Parents traveled from various regions across Tamil Nadu, including Thirunelveli, Nagerkovil, and Karaikudi to participate in this interactive session. The Parent-Teacher Meeting was successful, with parents expressing appreciation for the department's transparency and dedication to student welfare. The interaction fostered a stronger connection between parents and faculty, reinforcing a shared commitment to student excellence and growth.

Workshop

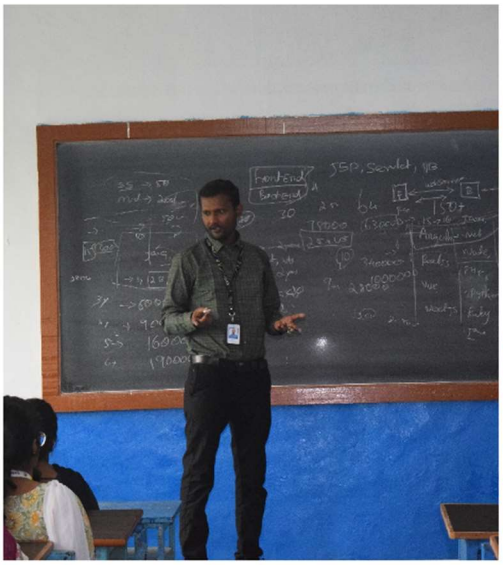
The Department of Computer Science and Engineering organized three technical workshops for second-year students: Machine Learning, Web Development, and Data Science. These workshops were held between October 14th, 18th, and 19th, 2024, aimed to provide participants with a solid foundation in each respective domain. The workshops on Machine Learning, Web Development, and Data Science were successful in providing students with valuable knowledge and practical skills in their respective fields. Each workshop fostered a collaborative and engaging environment, allowing students to enhance their technical abilities.

PATTAYAM - Inauguration of (IPR) Cell

The Department of Computer Science and Engineering successfully inaugurated the Intellectual Property Rights (IPR) Cell, named PATTAYAM, under the tagline My Idea, My Property on October 29th, 2024, at 9:30 AM held in AV Hall 1 in the Admin Block. This inauguration signifies the institute's commitment to fostering awareness and protection of intellectual property rights among its students and faculty. We were thrilled to kick off our Intellectual Property Rights (IPR) Cell, PATTAYAM, with two insightful sessions designed to empower and educate our academic community. These sessions were filled with valuable insights, sparking curiosity and emphasizing the importance of protecting innovations. Through PATTAYAM, we aim to foster a deep-rooted understanding of intellectual property rights, encouraging our students and faculty to secure and leverage their creative ideas.

Club Activity - Women Coding Club

St. Joseph's Institute of Technology OMR, Chennai, through its Department of Computer Science and Engineering, in collaboration with the ITASHA - Women Coding Club was organized a Workshop on Full Stack Development. The session, scheduled on Friday, 18th October 2024, conducted by Mr. R Ranjithkumar, a Technical Lead in Full Stack Development at Tata Consultancy Services. The workshop was conducted in CSE Lab 3 from 9:40 AM to 11:00 AM and provided valuable insights into full stack development for the attendees. This initiative reflects the institute's dedication to empowering students with technical skills and fostering hands-on learning experiences.



Club Activity - Coding Club

Java Programming Coding Competition organized by the Coding Club of the Department of Computer Science and Engineering. The competition was scheduled for October 28th, 2024, and will take place from 1:00 PM to 3:00 PM in the CSE Smart Room. This event provided a platform for students to showcase their Java programming skills and engage in a competitive coding environment.

Winner list:

1. **Nithish M and Manikandan N**
2. **Ashwin S.I and Abdul S**
3. **Jebin J.G and Praveen R**

Club Activity - Machine Learning Club

The Department of Computer Science and Engineering, in collaboration with the Machine Learning Club was hosted a hands-on session titled “Basics of Machine Learning” Scheduled on October 29th, 2024, from 10:00 AM to 11:30 AM,held in the Smart Classroom. The workshop handled by T. Sindhu, an Assistant Professor at St. Joseph's Institute of Technology. The primary objective was to introduce club members to fundamental concepts and techniques in machine learning, fostering a hands-on understanding of various ML models and their applications. " The event "Basics of Machine Learning" was a resounding success, offering participants a hands-on experience that bridged theoretical knowledge with practical application. It not only enhanced their understanding of linear regression but also fostered collaboration and critical thinking within the Machine Learning Club.

Faculty Achievements – IEI Rewards

Dr . J.Dafni Rose, has received best faculty advisor award from The Institution of Engineers (India) Kancheepuram Local Center for the year 2023-2024 .

The Department of Computer Science and Engineering has won best student chapter for the year 2023-2024 in the Institution of Engineers (India) Kancheepuram Local Center

Faculty Achievements – SCIE/ WOS Journal Publication

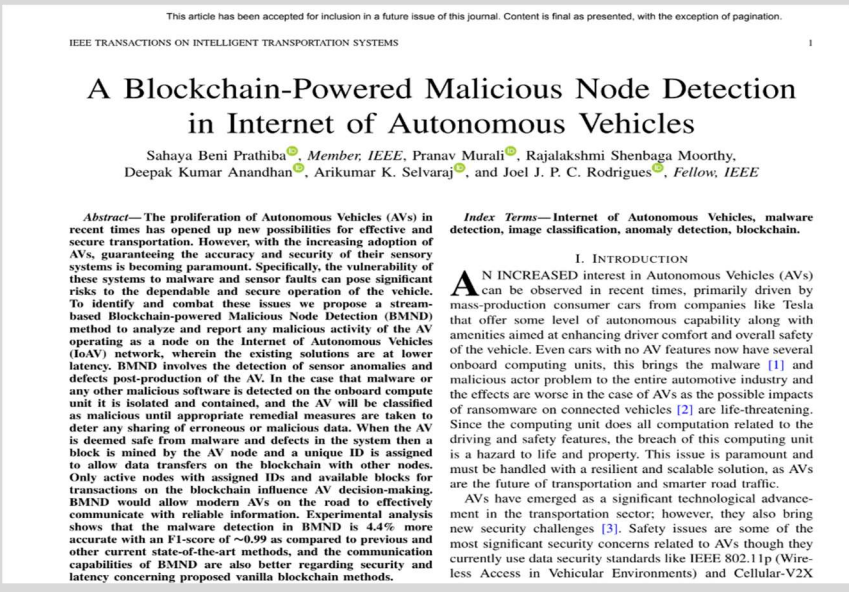
Dr. A. Deepak Kumar published a paper titled "A Blockchain-powered Malicious Node Detection in Internet of Autonomous Vehicles", in the IEEE Transactions on Intelligent Transportation Systems, October 2024.

Faculty Achievements – SCOPUS Journal Publication

1. **Dr. A. Deepak Kumar published a paper titled "Internet of Things Assisted Sleep Quality Recognition using Hunger Games Search Optimization with Deep Learning on Smart Healthcare Systems", in the Journal of Intelligent Systems and Internet of Things, October 2024.**
2. **Mr. S. Janagiraman published a paper titled " Automated Detection of Anomalous Holes in Fuel Injector Nozzles Using High-Definition Microphones (DH-FINM) and Machine Learning Algorithms", in the International Journal of Electronics and Communication Engineering, October 2024.**

Faculty Achievements – SCOPUS indexed Conference

Dr.D.Menaga published a paper titled “Global initiatives and collaborations in AI for Alzheimer's disease”, Book Chapter,Source Title: AI-Driven Alzheimer's Disease Detection and Prediction, on October 2024.



This article has been accepted for inclusion in a future issue of this journal. Content is final as presented, with the exception of pagination.

IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS 1

A Blockchain-Powered Malicious Node Detection in Internet of Autonomous Vehicles

Sahaya Beni Prathiba, *Member, IEEE*, Pranav Murali, Rajalakshmi Shenbaga Moorthy, Deepak Kumar Anandhan, Arikumar K. Selvaraj, and Joel J. P. C. Rodrigues, *Fellow, IEEE*

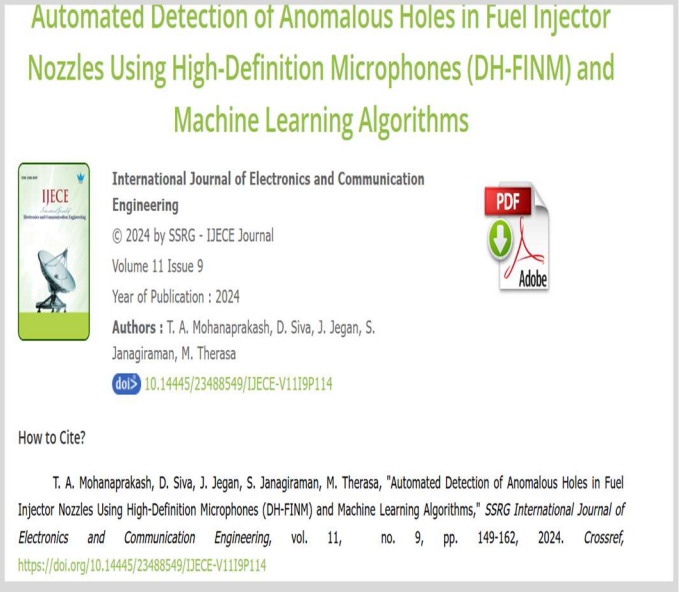
Abstract— The proliferation of Autonomous Vehicles (AVs) in recent times has opened up new possibilities for effective and secure transportation. However, with the increasing adoption of AVs, guaranteeing the accuracy and security of their sensory systems is becoming paramount. Specifically, the vulnerability of these systems to malware and sensor faults can pose significant risks to the dependable and secure operation of the vehicle. To identify and combat these issues we propose a stream-based Blockchain-powered Malicious Node Detection (BMND) method to analyze and report any malicious activity of the AV operating as a node on the Internet of Autonomous Vehicles (IoAV) network, wherein the existing solutions are at lower latency. BMND involves the detection of sensor anomalies and defects post-production of the AV. In the case that malware or any other malicious software is detected on the onboard compute unit it is isolated and contained, and the AV will be classified as malicious until appropriate remedial measures are taken to deter any sharing of erroneous or malicious data. When the AV is deemed safe from malware and defects in the system then a block is mined by the AV node and a unique ID is assigned to allow data transfers on the blockchain with other nodes. Only active nodes with assigned IDs and available blocks for transactions on the blockchain influence AV decision-making. BMND would allow modern AVs on the road to effectively communicate with reliable information. Experimental analysis shows that the malware detection in BMND is 4.4% more accurate with an F1-score of ∼0.99 as compared to previous and other current state-of-the-art methods, and the communication capabilities of BMND are also better regarding security and latency concerning proposed vanilla blockchain methods.

Index Terms— Internet of Autonomous Vehicles, malware detection, image classification, anomaly detection, blockchain.

I. Introduction

AN INCREASED interest in Autonomous Vehicles (AVs) can be observed in recent times, primarily driven by mass-production consumer cars from companies like Tesla that offer some level of autonomous capability along with amenities aimed at enhancing driver comfort and overall safety of the vehicle. Even cars with no AV features now have several onboard computing units, this brings the malware [1] and malicious actor problem to the entire automotive industry and the effects are worse in the case of AVs as the possible impacts of ransomware on connected vehicles [2] are life-threatening. Since the computing unit does all computation related to the driving and safety features, the breach of this computing unit is a hazard to life and property. This issue is paramount and must be handled with a resilient and scalable solution, as AVs are the future of transportation and smarter road traffic.

AVs have emerged as a significant technological advancement in the transportation sector; however, they also bring new security challenges [3]. Safety issues are some of the most significant security concerns related to AVs though they currently use data security standards like IEEE 802.11p (Wireless Access in Vehicular Environments) and Cellular-V2X



Automated Detection of Anomalous Holes in Fuel Injector Nozzles Using High-Definition Microphones (DH-FINM) and Machine Learning Algorithms

International Journal of Electronics and Communication Engineering

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How to Cite?

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Faculty Achievements – Patent Publication

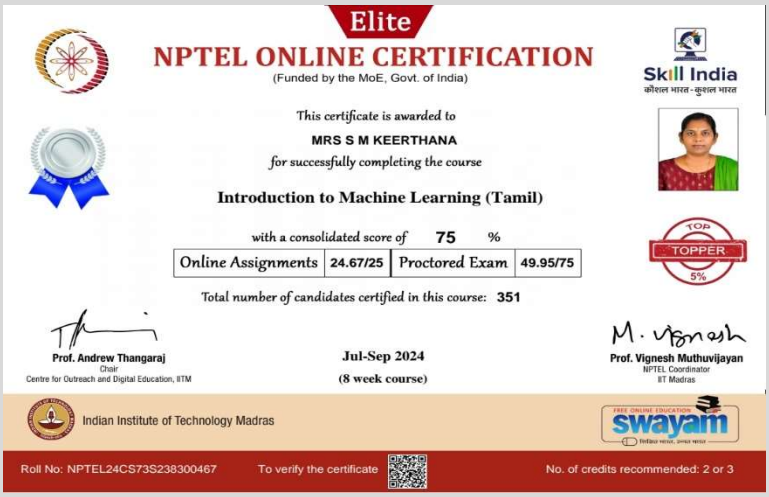
1. Dr.J.Dafni Rose has published a patent titled "Eco - Concious Recyclable Areca leaf plates and Packaging for Food serving optimized with Machine Learning" with application number 202411051101 on 4th October 2024.
2. Dr. C.A Subasini has published a patent titled "Role of Radio Frequency Identification (RFID) In Warehouse and Logistics Management System Using Machine Learning Algorithm" with application number 202441073897on 4th October 2024.
3. Dr. A. Deepak Kumar has published a patent titled "A Hybrid AI and Machine Learning Approach for Accurate Skin Cancer Detection and Classification" with application number 202411071439 on 4th October 2024.
4. Mrs. Shanker Shalini has published a patent titled "Optimized Embedded Processor for Real-Time Data Acquisition in Sensor Networks" with application number 202441074462 on 4h October 2024.
5. Mrs. E. Ajitha has published a patent titled "IOT and Machine Learning Technologies for Effective Environmental Pollution Management" with application number 202441070444 on 4th October 2024.

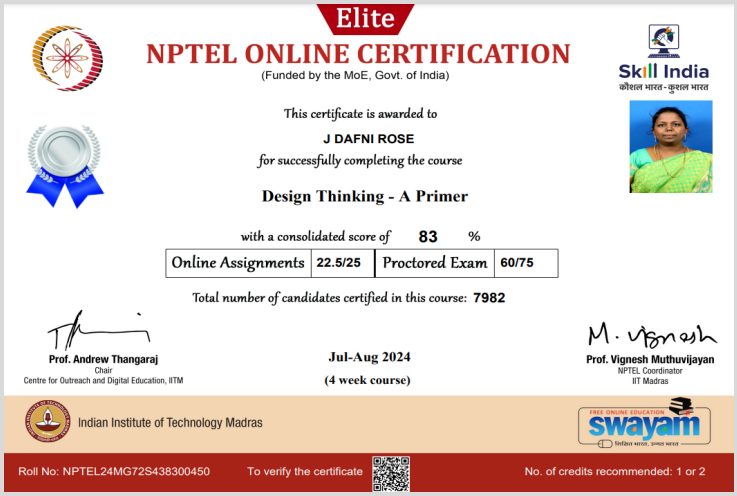
Faculty Achievements – FDP (Physical Mode)

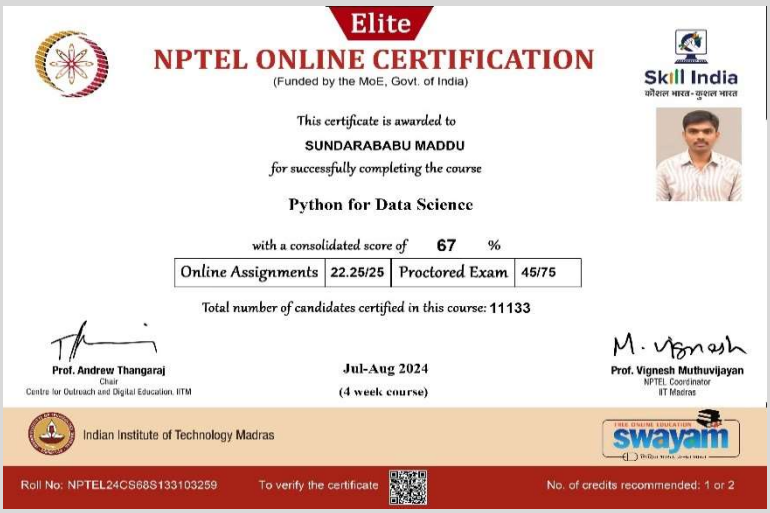
1. Dr.V.Sabaresan has participated 6 days Offline FDP on "Immersive Technology Exploring Augmented Reality Virtual Reality", Organized by Panimalar Engineering College, Chennai on 21-10-2024 to 26-10-2024.
2. Mr Muthukumar has participated 6 days Offline FDP on "Immersive Technology Exploring Augmented Reality Virtual Reality", Organized by Panimalar Engineering College, Chennai on 21-10-2024 to 26-10-2024.
3. Mr Sundarababu Maddu has participated 6 days Offline FDP on "Immersive Technology Exploring Augmented Reality Virtual Reality", Organized by Panimalar Engineering College, Chennai on 21-10-2024 to 26-10-2024.

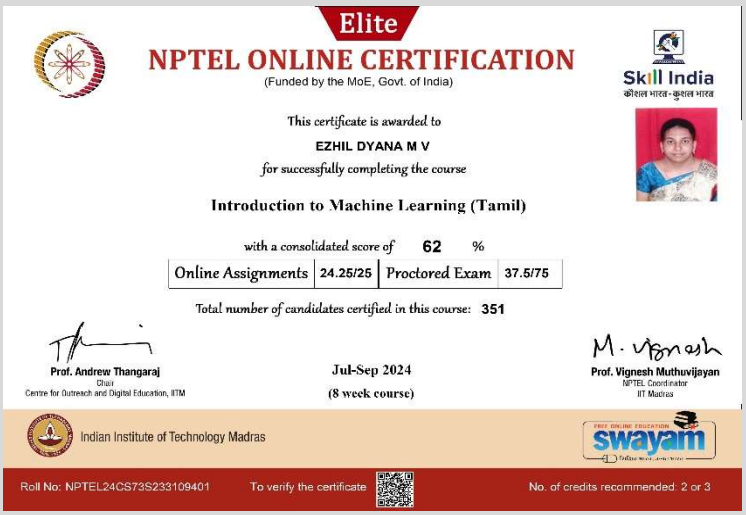
Faculty Achievements – NPTEL Certification

S.NO	Faculty Name	Course Name	Grade
1	Dr.J.Dafni Rose	Design thinking – A Primer	Elite Sliver
2	Dr.L.SaiRamesh	Design thinking – A Primer	Elite
3	Mrs.M.Ramya	Introduction to machine Learning	Successfully completed
4	Mr.Sundarababu Maddu	Python for Data Science	Elite
5	Mr. S.Muthukumar	Introduction to machine Learning	Elite
6	Mrs. S.M.Keerthana	Introduction to machine Learning	Elite Sliver + 5 % Topper
7	Mr. S. Janagiraman	Demystifying Networking	Successfully completed
8	Mrs. M. V. Ezhil Dyana	Introduction to machine Learning	Elite
9	Mr. S. Muthukumar	Python for Data Science	Elite









Student Achievements

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Department of Computer Science and Engineering

Congratulations

The Management, Principal, and Staff members congratulate the following students who won first prize in **IEEE WIE INTERNATIONAL LEADERSHIP SUMMIT,** an international level idea presentation event organized by **ANNA UNIVERSITY** on **5th October, 2024.**

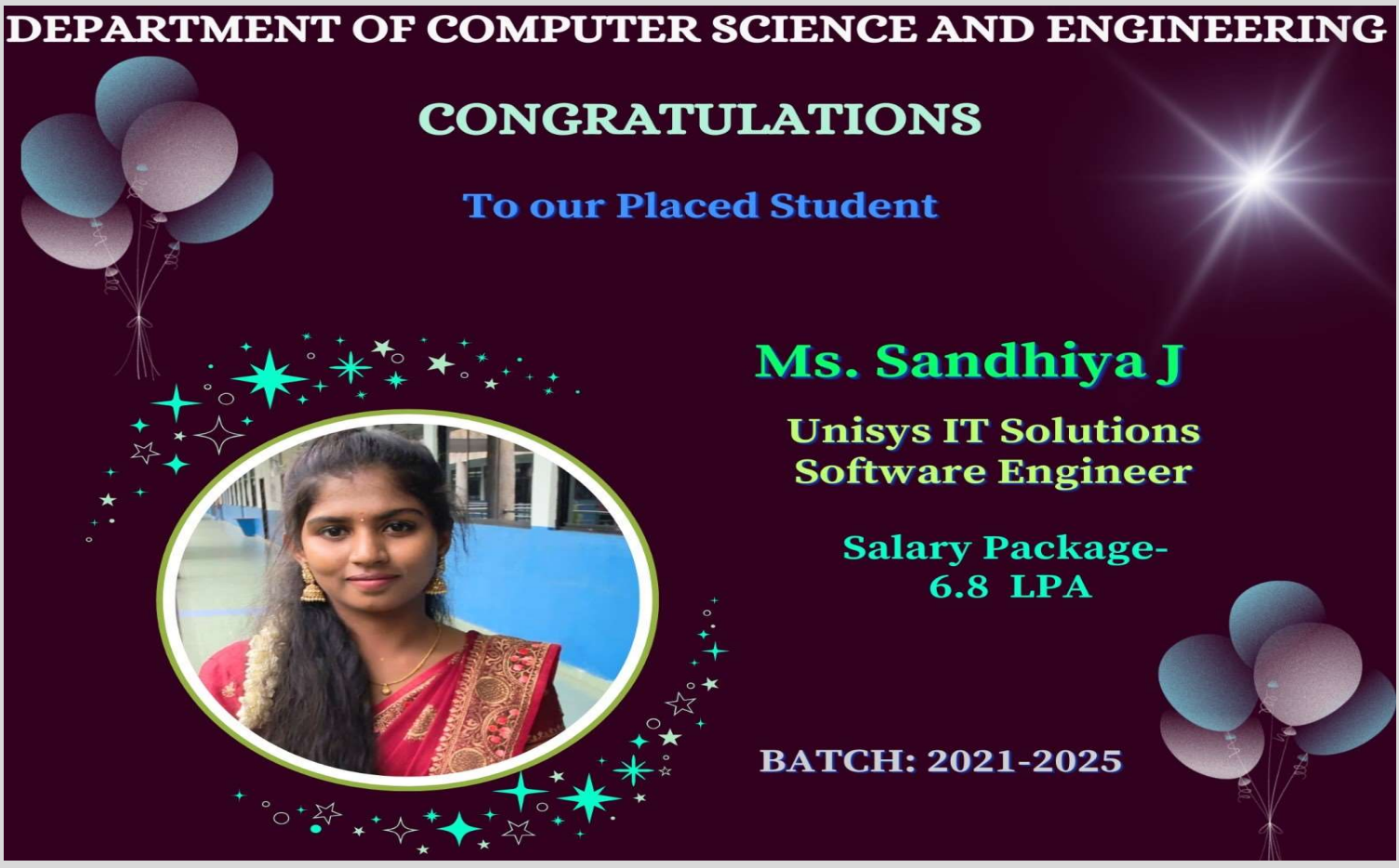
Team Name	Students Name	Year	Position	Prize Amount
VOICE UP	VASITHRA D	IV	I	Rs. 2,500
	SETHULAKSHMANAN SP			
	SANJITH KUMAR M			

21/10/24 **Chairman**

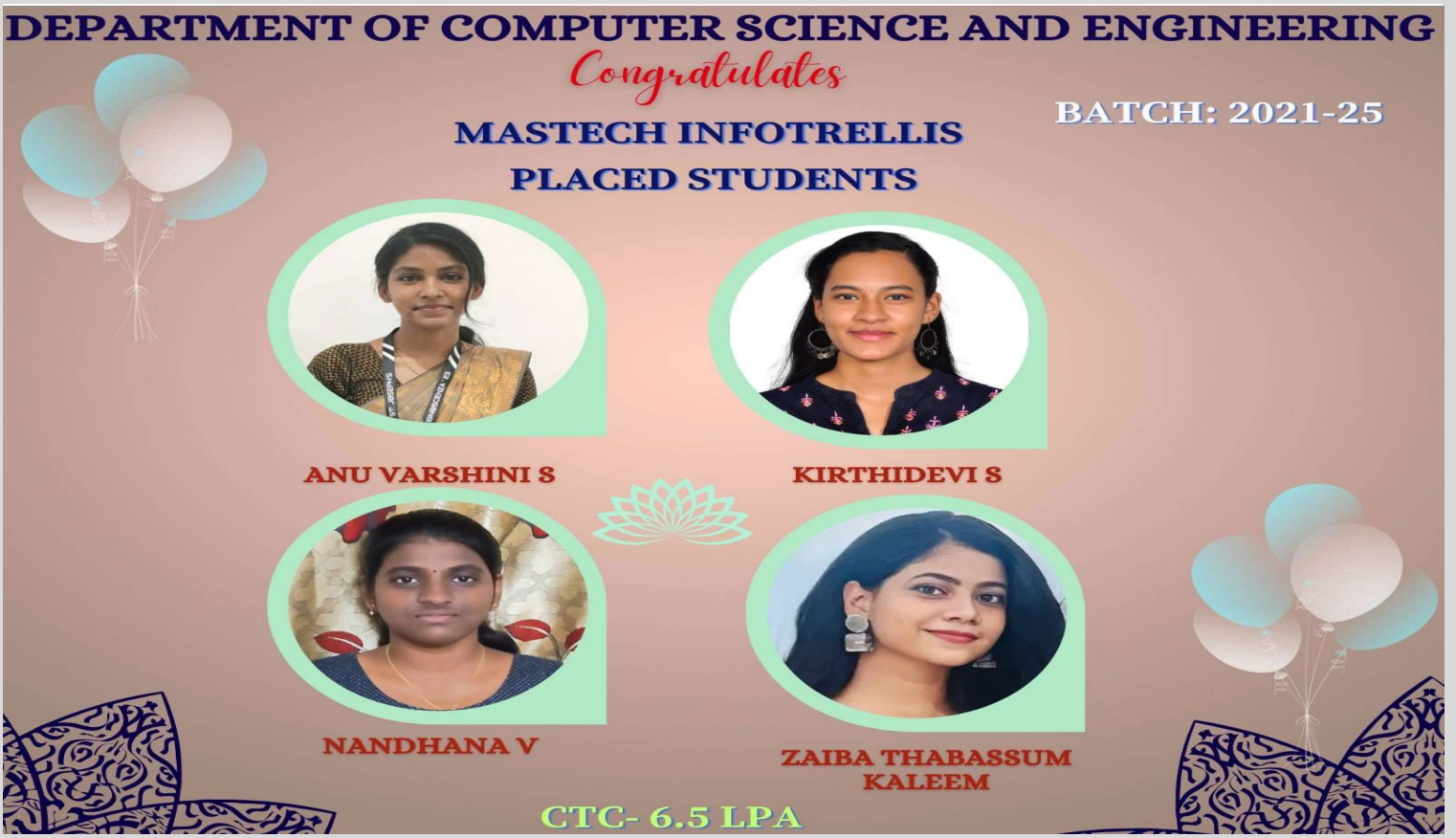
22-10-24

Student Achievements

Mr Kalimuthu, IV year has got best student award from The Institution of Engineers (India) Kancheepuram Local Center for the year 2023-2024.



Student Achievements



Student Achievements

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Congratulates

Infosys Placed Students

AKSHAY A

ANNLYN BRIGHT

ASHIBHA S

BENNY ISRAEL J

POOJITHA BOYIDI

DURAIMADHAVAN K R

P. EUGINE CARMEL

HARIS JAI SOORYA V

JANALYN MAROULA L

JESWI NIHIDHA E

MOHAMMED SHAHID

MUNTAZIR FAYAZ WANI

MUTHUKUMARAN S

RAMITH JAGATHESE J

RAZLINA JOAN S J

SUTHARSHANAGAYATHRI US

Infosys

Batch
2021-2025

CTC-3.6 LPA

Student Achievements

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Congratulates

Cognizant Digital Nurture 3.0

Placed Students

ANNLYN BRIGHT

BENNY ISRAEL J

CHRISTINA MICHELLE RAYAN

HEMALATHA J

LEMI DEBORAH SOLOMON SURESH

PRIYANKA S

SAHITHYA SHRE H

SETHULAKSHMANAN SP

SIVAGANESH N

SRINITHI B

SWETHA P

VIGRAM K M

YOGESHWARAN S

CTC- 4 to 7 LPA

Batch
2021-2025

cognizant