FEBRUARY 2025 VOL.5 ISSUE 2

SVCE | Sri Venkateswara College of Engineering

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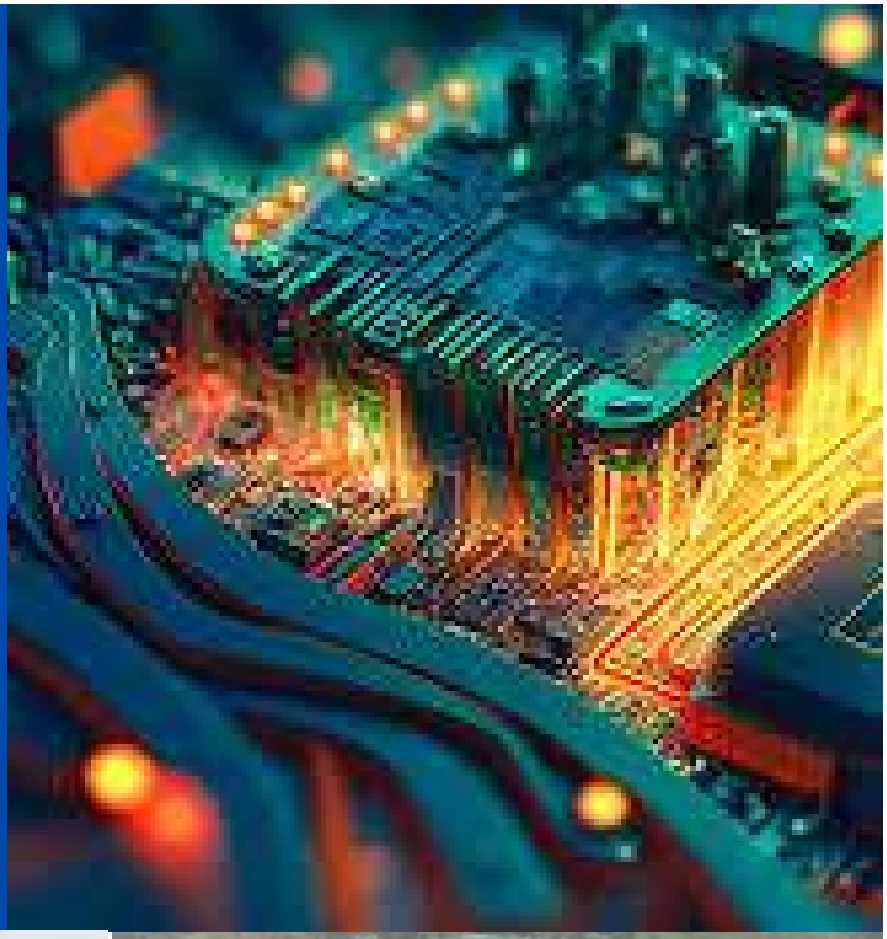

VISION OF DEPARTMENT

To lead the future of Electronics and Communication Engineering, through developing accomplished people, transformative research, distinguished academics, developing break-through innovations and sustainable solutions to serve society at the national and global level.

MISSION OF DEPARTMENT

By fostering a culture of continuous learning and knowledge acquisition in electronics and communication engineering through rigorous academic programs, research opportunities, industry collaborations, with provision of necessary resources and support.

By nurturing an environment that empowers learners to progress and reach their full potential, contributing to the advancement of Electronics and Communication Engineering and prosper in their careers.

By contributing to society through innovative and sustainable engineering solutions to tackle national and global issues, thereby enhancing the quality of lives and communities.

FACULTY ARTICLE

SECURING INDUSTRIAL INTERNET OF THINGS

Mr.S.Elangovan,
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Sri Venkateswara College of Engineering (Autonomous), Sriperumbudur

1. INTRODUCTION

Internet of Things refers to a network of devices, vehicles, appliances and other physical objects that are embedded with sensors, software and network connectivity. IoT has a vast area of applications, one of the major areas is in industries. The evolution of IoT technologies we moved from traditional industries to a smart manufacturing industry. Various technologies, such as Artificial Intelligence (AI), robotics, Internet of Things (IoT), 3D printing, nanotechnology, and Quantum computing, led to the development of many advanced systems. These gradual improvements in technologies have resulted in the 4th Industrial Revolution. The Industrial internet of things (IIoT) is a revolutionizing technology used in industries to enable real time monitoring, predictive maintenance and automation. However the integration of more connected devices in the industrial environments also increases cyber security risks. The Industrial internet of things (IIoT) cybersecurity protects connected industrial devices and systems from cyberattacks, ensuring data privacy and access control, crucial for critical infrastructure and manufacturing processes.

2. INDUSTRIAL INTERNET OF THINGS

As IIoT became popular, the advantages that they offered to manufacture plants pioneered the development of Industry 4.0 as it is called in Europe and Smart Manufacturing as it is called in the USA.

Fig.1. Industrial Internet of Things

The Fig.1. shows the diagram of Industrial Internet of Things. Industry 4.0 Data Manufacturing plant functions on one basic principle: to combine different manufacturing machines, facilities and companies to create a manufacturing chain. This Value Chain Can Greatly Benefit From automation, autonomizing and optimizing operations. In- industry 4.0 benefits from the advancements in IIoT, Internet Of Service (IoS), Manufacturing Cyber-Physical Systems(CPS), Cloud and Fog manufacturing, and manufacturing analysis to advance. Similar to IIoT once industries start moving toward this new standard of manufacturing they need to be aware of the various types of attacks and need execute steps towards blocking them since there is a pressing need to buckle down on this issue.

3. CYBER SECURITY ATTACKS IN IIOT

Over the past few years, the manufacturing industry has experienced nearly every possible setback. From rising labor and material costs to supply chain issues, manufacturers find themselves seeing year- over-year profit losses. Specific statistics on Industrial Internet of Things (IIoT) cyberattacks over the past three years are limited.

2022: Over 112 million IoT cyberattacks were recorded globally, up from approximately 32 million in 2018. To protect industrial plants from internal and external cyber attacks, all levels must be protected simultaneously – from the plant management level to the field level and from access control to secure data communication. The figure 2 shows the different levels of security in the industry.

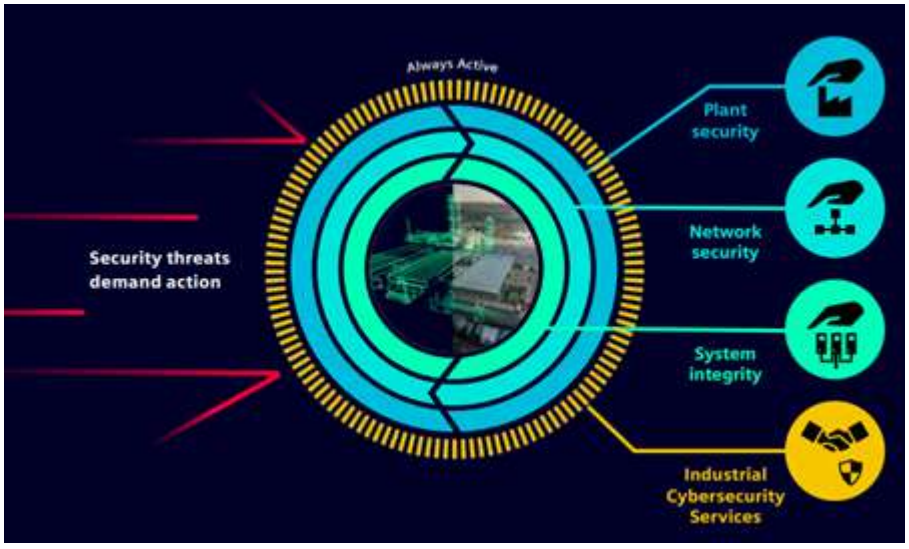


Fig.2. Security Threats in Industry

2023: A report highlighted a 400% surge in IoT and Operational Technology (OT) malware attacks over a six-month period, based on the analysis of approximately 300,000 blocked attacks.

3.1. Common Attack Types

Although attackers continue to evolve their methodologies, they often use similar types of attacks that have historically been successful, especially when targeting a specific industry that has unique security issues. By understanding the most common attacks, manufacturers can implement more effective risk mitigation strategies and controls.

3.2 Ransomware

Ransomware attacks remain a primary attack method because they enable attackers to get a two-for-one benefit. In response to organizations improving backup and business recovery capabilities,

- **Encrypt data** making systems unusable and only releasing the decryption key if the company pays the ransom.
- **Exfiltrate data** threatening to release it on the dark web unless the organization pays the ransom.

3.3. Malware

Ransomware is the square to malware's rectangle. While all ransomware is malware, not all malware is ransomware. Malicious actors deploy various types of malware variants that enable them to deploy different types of attacks. For examples, some malware that threat actors may use against manufacturers and their IIoT/IT environments include: Infostealer gathers login and credentials from the compromised computer, Botnet gives attackers control over devices. These malware variants enable attackers to engage in the following attack types:

- **Password guessing attacks:** At a minimum, info stealer malware gives attackers the login IDs that people use to gain access to systems and networks. Armed with this data, they can then automate attacks that use common weak passwords to see if they can find a match that gives them unauthorized access.
- **Impersonation attacks:** If the info stealer malware captures a current login ID and password, then the attackers can use these to impersonate a user.
- **Denial of Service (DoS) attacks:** These attacks are designed to cripple a target host by sending it so much traffic it cannot handle the volume.

4. ATTACKS MITIGATION METHODS

Cyber-attacks often originate from weak or vulnerable links that exists in networks or security systems employed to manage these devices. Attackers are actively looking to exploit these weaknesses their benefit. Nowadays, everything that is connected to the internet is prone to Cyber- attacks. The interconnection of IoT/IIoT devices benefits attackers as all they are required to do is find one weak link and they can access data from all of the connected devices.

1) Using Strong Passwords: Implementing poor password requirements is the primary reason IoT/IIoT networks are targeted. When creating passwords avoid using commonly used passwords and incorporate the mixture of uppercase, symbols, and numbers. When generating passwords ensure that it is a unique password for different accounts. Lastly, change the default passwords that are assigned by manufacturers for the device.

2) Updating Software: Outdated software may contain flaws that allow attackers to gain access to personal information. Companies Often Release Software Updates When The current version contains security vulnerabilities or bugs that can be exploited by attackers. Always Ensure To Download Up- dates from trusted source and if possible enroll the device to automatically install updates from manufacturer's website.

3) Creation Of Separate Networks: When setting up the environment for IoT/IoT devices ensure that they are kept separate from the rest of the devices to limit the possibility an external device causing problems. Keeping These Devices in a separate private network also eliminates the possibility of an Attacker infecting other devices and spreading the malware in the network. Another benefit of this implementation is that only authorized users are going have the ability to access and modify data.

4) Applying stronger encryption algorithms for the Internet: Guarding of data heavily relies the form of encryption that is applied when data in transit. Encryption turns regular text into a series of random letters and numbers commonly known as ciphertexts that it is not read able to regular users unless they possess key to convert the ciphertext into regular text.Using encryption such asWPA2 when configuring Wi-Fi router prevents attackers from reading the data even ifthey have obtainedit.If The Networks Are Encrypted The Information that is transmitted is secure not allowing attackerto benefit from it.

4.1. AI & DEEP LEARINING FOR ATTACK DETECTION

In Industry 4.0, various technologies were used to make the industrial process more smart. One of the key technologies is AI . AI and Deep learning can significantly enhance the cyber security in industrial IoT by detecting cyber threats in real-time and improving the system resilience. The existing cryptographic solutions on individual IoT devices are insufficient to cover the entire spectrum of IoT security due to its dynamic nature of attacks in IoT networks. To overcome this, a Deep Learning-based mechanism has been developed in the proposed work to detect various attacks in IoT networks.

5. CONCLUSION

IoT/IIoT devices have become an important part of our lives. One cannot imagine getting through a day without interacting with one of these devices. With the introduction of automation in certain aspects of IoT devices in the foreseeable future, there will be devices that will be able to operate freely without needing a human to control them. This invention has fueled the transition of the industrial sector to Smart Industry/Industry 4.0 where large production plants can generate products by utilizing the process of automation. This process heavily relies on integrity the data that is transmitted between each sensor actuator. Since the emergence of IoT in the industry, there has been an increase the number of numerous Cyber-attacks that require attention before determining ways to improve their security.

REFERENCES

[1] Mohammed Albishari, Mingchu Li,Runfa Zhang, Esmail Almosharea, **“Deep learning-based early stage detection (DL-ESD) for routing attacks in Internet of Things networks”,** The Journal of Supercomputing, 2023.

[2] Sana Rabhil, Tarek Abbes, Faouzi Zarai, **“IoT Routing Attacks Detection Using Machine Learning Algorithms”,** Wireless Personal Communications, 2023.

[3] Yash Shah, Shamik Sengupta, **“A survey on Classification of Cyber-attacks on IoT and IIoT devices”,** IEEE Explore 2021.

FACULTY PARTICIPATION

(SEMINAR/FDP/STTP/WORKSHOP/ONLINE COURSE/CONFERENCE)

- **Dr.S.R.Malathi, Dr.M.Athappan** and **Dr.P.Pattunnarajam** attended **Inauguration of Tamil Nadu Chapter, VLSI Society of India** organized by **IIT Madras** on 09.02.2025
- **Dr.D.Menaka, Mrs.K.S.Subhashini** and **Mrs.L.Anju** attended a **one-week online Professional Development Programme** titled **"PDP EE-25-285 Smart and Intelligent Systems"** organized by **National Institute of Technical Teachers Training and Research (NITTR), Chennai** from 17.02.2025 to 21.02.2025
- **Mr.L.K.Balaji Vignesh** attended a one day **online workshop** on **"EMI/EMC–Theory and Practice"** organized by **Thiagarajar College of Engineering, Madurai** on 27.02.2025
- **Mrs.L.Anju** attended an **online seminar** on **"MATLAB Without Borders: Connecting your Projects with Python and other Open-Source Tools"** organised by **Mathworks** on 27.02.2025
- **Mr.Kanagaluru Venkatesh** has completed a **self-paced training course** on **"Machine Learning Onramp"** on 28.02.2025

FACULTY PUBLICATION
(JOURNAL/CONFERENCE)

- **Mr.Kanagaluru Venkatesh and Dr. M. Sasikala** have published a journal article titled **"Artificial Intelligence-Based BCI Using SSVEP Signals with Single-Channel EEG"** in **Technology and Health Care,** February 2025.
- **Dr.R.Praveena, Mrs.S.Mary Cynthia, Dr.S.Jacily Jemila and Mr.T.R. Ganesh Babu** published a book Chapter tilted **"Image Denoising by Curvelet Transform Based Adaptive Gaussian Notch Filter"** in the Proceedings of the **International Conference on Signal Processing and Computer Vision.**
- **Dr.M.Bindhu** published a journal article titled **"Deep Learning in Remote Sensing for Climate-Induced Disaster Resilience: A Comprehensive Interdisciplinary Approach"** in **Remote Sensing in Earth Systems Sciences (https://doi.org/10.1007/s41976-024-00178-0)**

INTRAMURAL FUNDS GRANTED

- **Mrs.L.Anju, Mr.Anish Krishnan, Mr.A.Diraj** and **Mr.K.Gnanavel** received an **intramural grant of Rs 9000/-** for the UG Project titled **"Smart multifunctional shoe for enhanced mobility safety and sustainability".**
- **Mrs.R.Kousalya, Ms.A.Shree Swetha, Mr.S.Shyam, Ms.Stefanie M Olivia** and **Mr.S.Tarun Kumar** received an **intramural grant of Rs 9500/-** for the UG Project titled, "IoT Enabled alcohol detection and Drivers Health Monitoring System".
- **Dr.S.Vidhyashree, Ms.N.G.Arthiya, Ms.B.Aruna** and **Ms.N.S.Bhuvaneshwari** received an **intramural grant of Rs 10000/-** for the UG Project titled, **"Implementation Of Dual Band MIMO Flexible Millimeter Wave Antenna For Wearable Electronics Applications".**

FACULTY PROPOSAL SUBMISSION

- **Dr.R.Gayathri, Dr.A.Ramya, Mrs.S.M.Mehzabeen** and **Mrs.S.Mary Cynthia** submitted a project proposal titled **"Enhanced Neural Network for classification of Hyperspectral Imagery using Ensembled models",** to the **ISRO RESPOND scheme** on 12.02.2025.
- **Dr.A.Ramya, Dr.R.Gayathri, Dr.N.Kumaratharan** and **Mrs.S.M.Mehzabeen** submitted a project proposal titled **"AI-based embedded system for spacecraft health monitoring"** to the **ISRO RESPOND scheme** on 12.02.2025.
- **Dr.G.A.Sathish Kumar, Mrs.R.Kousalya** and **Mrs.B.Sarala** submitted a project proposal titled **"Enhancing Security in Next-Generation Communication Systems with ECC and Post-Quantum Cryptography"** to the **ISRO RESPOND scheme** on 12.02.2025.

PATENTS
(PUBLISHED/GRANTED)

- **Dr.D.Menaka, Ms.S.Anishaa, Ms.P.C.Dhanshrepriya, Ms.A.Dharani, Ms.A.Gogulapriya** and **Ms.K.Jeevitha** filed an **Indian patent** titled **"AN IOT-DRIVEN PREDICTIVE AND REAL TIME SAFETY SYSTEM FOR HAZARDOUS SEWER AND SEPTIC TANK OPERATIONS"** published in **Patent Office Journal.**
- **Dr.P.K.Praveen Kumar** and **Dr.S.Vijayanand** granted an **Indian patent** titled **"Liver Cancer Detector"** published in **Patent Office Journal** on 20.01.2025 **(Application No: 439080-001)**
- **Dr.N.Kumaratharan** published an **Indian patent** titled **"NEXT-GENERATION 6G TERAHERTZ COMMUNICATION SYSTEM ENABLING ULTRA-HIGH-SPEED DATA TRANSFER AND SEAMLESS CONNECTIVITY"** on 31.01.2025 **(Application No: 202541006341A)**

FACULTY ACHIEVEMENTS

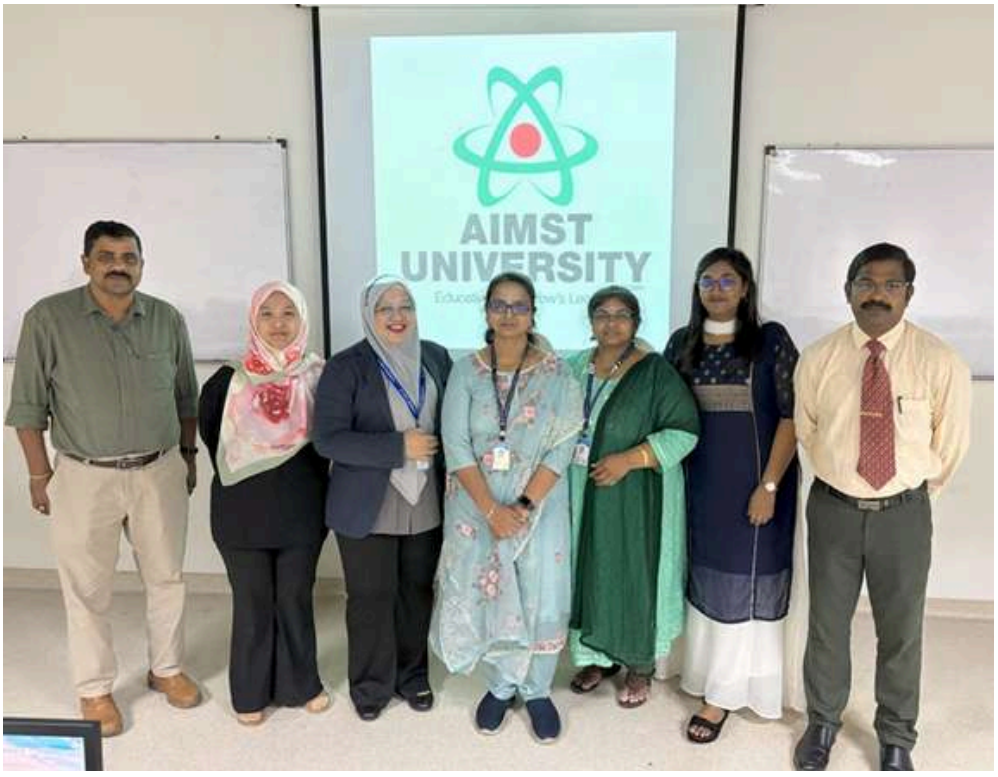
- **Dr.D.Menaka** delivered a lecture titled **"Image classification using deep learning architectures"** to the students of **AIMST University, Malaysia.**

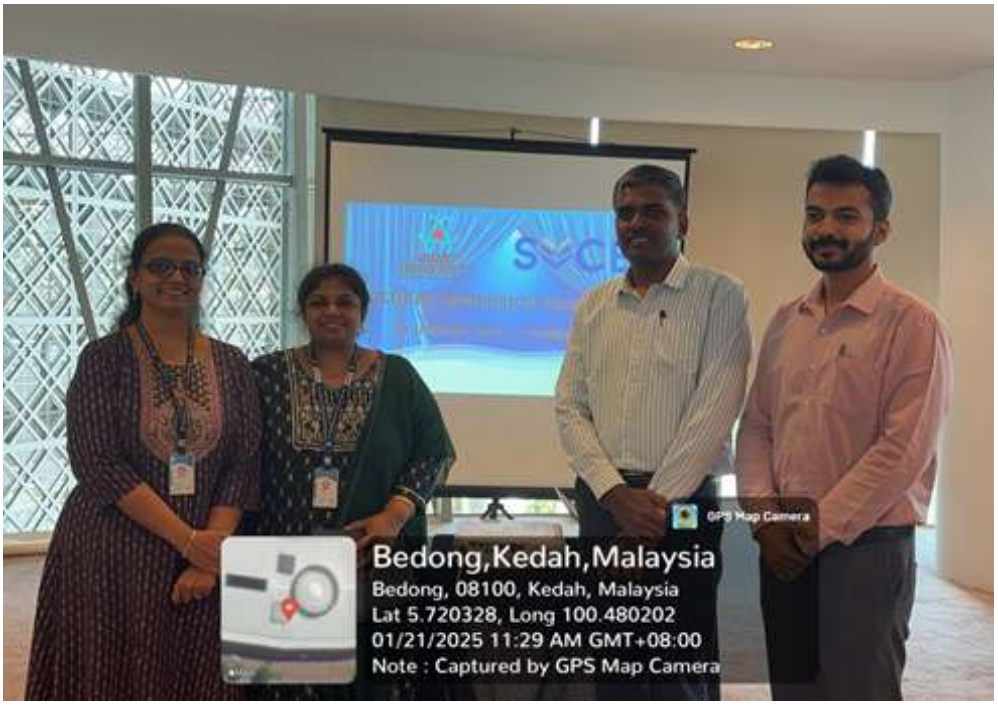
- **Dr.T.Jeyaprabha** acted as a **judge** for **24 Hours HackHerThon 2.0** organized by Sri Venkateswara College of Engineering (Autonomous), Sriperumbudur on 12.02.2025 to 13.02.2025
- **Dr.T.J.Jeyaprabha** acted as **Guest of Honour** for **IETE Students Forum Inauguration 2025** organized by Department of Electronics and Communication Engineering, **Velammal Institute of Technology, Chennai** on 18.02,2025

- **Dr.D.Menaka** delivered a lecture titled **"Image classification using Gen AI"** in the twelve day Alumni Workshop series on "**Building the Future with Applications of Generative AI"** organized by **Department of Computer Science and Engineering, SVCE, Sriperumbudur** on 22.02.2025

FACULTY EXCHANGE PROGRAM

- **Dr.D.Menaka** actively participated in the **Faculty Exchange Programme at AIMST University, Malaysia** from 20.01.2025 to 03.02.2025. During this programme, she actively contributed to academic collaborations, engaged in knowledge exchange and participated in interdisciplinary discussions, significantly enhancing the exchange of ideas and best practices in IoT, Deep Learning and Network security.





STUDENT PARTICIPATION

(Co-curricular Activities/Extra-curricular Activities)

- **Ms. A.S.Nivashini and Ms.R.Preethika (II Year ECE)** attended the **Workshop** on **"Pravega workshop"** conducted by **IISC, Bangalore** from 01.02.2025 to 02.02.2025.
- **Ms.T.Renuka Devi (III Year ECE)** participated in the **Project competition** tilted **"Techdivathon"** organized by **Panimalar Engineering College, Chennai** on 03.02.2025.
- **Mr.L.Viswanathan, Mr. B.Vijayasarathy, Mr.K.Tharun Vel and Ms.Teena Shirley Savarimuthu (I Year ECE)** attended the event **Impulse symposium (IOT WORKSHOP and CIRCUIT DEBUGGING)** organized by **Chennai Institute of Technology, Chennai** on 05.02.2025.
- **Ms.Sanjana praveen kumar, Ms.S.Sai Raksheedha, Mr.S.Rohith Kanna and Mr.R.Rithvik R (II Year ECE)** attended the event **NEUROVERSE'2025 (Code Relay)** organized by **Saveetha Institute of Medical and Technical Sciences, Chennai** on 07.02.2025.
- **Ms.J.Princy Nikitha, Ms.M.Pavithra, Ms.S.K.Harshinivarsa (I Year ECE)** participated the **Project competition "Hack'her'thon v2. 0"** organized by **Sri Venkateswara College of Engineering** from 12.02.2025 to 13.02.2025
- **Mr.E.S.Sarabheswaran, Mr.Sarabesh Adithya, Mr.R.S.Ram Subeesha and Mr.S.P.Ramasamy (I Year ECE)** attended the event **"Workshop on Drone Technology"** organized by **Sri Venkateswara College of Engineering** from 13.02.2025 to 15.02.2025
- **Ms.S.Deepa, Mr.M.Adhitya and Ms.S.Hemasri (III Year ECE)** participated in **Project competition TRACKBOT'25** organized by **Sri Venkateswara College of Engineering** on 15.02.2025.
- **Mr.K.Surender Sah, Ms.R.Ragavardhini, Ms.A.S.Nivashini, Mr.J.Moghith Kumaran and Mr.S. Jeevanantham (II Year ECE)** participated in **Project competition TRACKBOT'25** organized by **Sri Venkateswara College of Engineering** on 15.02.2025.
- **Ms.S.Deepa and Ms.S.Hemasri (III Year ECE)** participated the event **"UPAGRAHA'25" (Symposium)** organized by **Sri Venkateswara College of Engineering** on 22.02.2025.
- **Ms.Ragavardhini, Ms.J.Prisha Jothi, Ms.S.Harshinivarsa and Ms.M.Pavithra (II Year ECE)** participated the event **"UPAGRAHA'25" (Symposium)** organized by **Sri Venkateswara College of Engineering** on 22.02.2025.
- **Ms.Vanmathi Samikkannu, Ms.Ragavardhini, Ms.J.Prisha Jothi and Ms.M.Pavithra (II Year ECE)** attended the **PCB Design Workshop** organized by **Chennai Institute of Technolog, Chennai** on 26.02,2025.

STUDENT ACHIEVEMENTS

(Co-curricular Activities/Extra-curricular Activities)

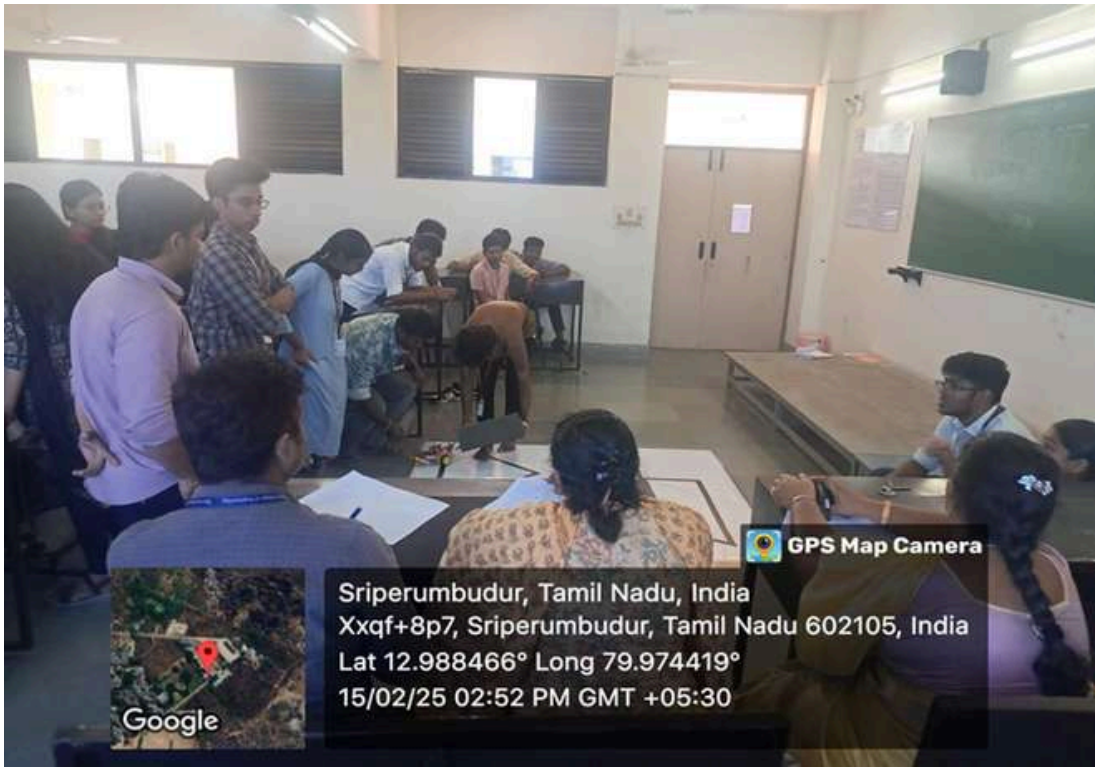
- **Mr.S.Hari Prashad (I Year ECE)** secured **second place** and attained a **IPC-Special Mention** in the event of **"SVCE INTRA MUN"** organized by **Sri Venkateswara College of Engineering** on 06.02.2025
- **Ms.R.Priyadharshini (II Year ECE) and Ms.R.Snekaa (IV Year ECE)** attained a **Special Mention** in the event of **"I CUBE 4.0"** organized by **Sri Venkateswara College of Engineering** on 07.02.2025
- **Ms.A.S.Nivashini and Ms.R.Ragavardhini (II Year ECE)** won **First place** with **cash prize of Rs.1000/-** in the event of **"TRACKBOT'25"** organized by **Sri Venkateswara College of Engineering** on 15.02.2025
- **Mr.K.Surya (II Year ECE)** won a **cash prize of Rs.1500/-** in the event of **"TRACKBOT'25"** organized by **Sri Venkateswara College of Engineering** on 15.02.2025
- **Mr.N.Jegatheesh (II Year ECE)** won **First Place with a cash prize of Rs.2000/-** in the symposium organized by **St Joseph's College of Engineering, Chennai** on 27.02.2025.

STUDENT EXCHANGE PROGRAM

- **SVCE Global connect** provides a **14 days Global Immersion Program** from **20.01.2025 to 02.01.2025** for the students and the faculty with a global platform through the partnership with **AIMST University, Kedah, Malaysia.** AIMST University offered an excellent platform with state-of-the-art facilities and expert faculty, ensuring that the students are getting the best possible learning experience.
- The immersion program is a significant educational endeavour at international standard organized by SVCE Global Connect for the **II and III year students of CSE, AD, ECE, EEE and Biotechnology.** The immersion program was meticulously designed to provide the students with hands-on experience. The **students have gained insights** into **advanced technologies like IoT security, data analytics, integration with AI/ML smart antenna design and applications of IoT in various fields like smart homes, health care, agriculture etc.**
- The main target of this program was to encourage the students to work on technical projects and presentations, fostering creativity and critical thinking. The program covered diverse skill areas such as Integration of AI/ML in IoT, sensor data analysis, critical problem solving and IoT applications ensuring students develop a wide-ranging skill set that is aligned with future industry demands.
- A total of **13 ECE students** attended the event and **Dr.D.Menaka Associate Professor/ECE** accompanied the students to guide, motivate and support the students technically.

EVENTS ORGANIZED

- **TrackBot,** an event for all Engineering students was inaugurated by **Dr.T.J.Jeyaprabha** (Faculty coordinator) on 15.02.2025 **with 23 teams (69 participants) registered,** the event had two rounds. In Round 1, participants built their Bots with the guidance of our RAIC mentors and made their bots to run on a simple track. In Round 2, based on the insights given from round1, the teams debugged and improved their bots, making their final run in track producing the correct output. The Juries **(Dr.T.J.Jeyaprabha, ASP/ECE, Mrs.S.Mary Cynthia, AP/ECE, Mr.A.G.Murali Krishna, AP/ECE)** evaluated teams based on accuracy, interruption, execution time. The **first place** was won by **Mr/Niranjan, Ms.Nivashini and Ms.Nandita. Ms.Yasmin Fathima, Mr.Syed Ibrahim and Mr.Yosuva Pius (B.S Abdur Rahman University)** secured **second place.** The special mention was bagged by **Ms.R.Bawadharni Sree, Mr.S.Balaji, Ms.L.S.Ashika and Mr.Lohith Ashwa, Mr.Mogith Kumaran, Mr.Prajeeth.**



EVENTS ORGANIZED

- The **Department of Electronics and Communication Engineering** organized a **national level technical symposium (Upagraha'25)** was conducted by the **ECE Association in association with IETE-SF and RAIC** on 22.02.2025. The inaugural ceremony commenced with the arrival of the chief guest **Mr.Aru Sankaranarayanan Managing Director, Deloitte,** who was received by **Dr.G.A.Sathish Kumar, Prfoessor/HoD-ECE.** The Symposium comprised of six technical events. **TECH THESIS (Paper Presentation with domains related to hardware and software), PEEK A PROJECT (Project Presentation on numerous domains), BLIND CHASE (Electronic quiz with twists and Blindfolded Circuit debugging challenge), PICK IT SELL IT (Product pitch through auction based components bought), WATT A HUNT (MCQ based sequence of puzzle solving), SIMUL-(Wokwi simulation challenge).** Various participants from SVCE and other colleges participated in these events and gained valuable insights from this experience. The event was successfully coordinated by **Dr.T.J.Jeyaprabha, Mrs.S.Mary Cynthia and Mr.A.G.Muralikrishna (ECE Association Coordinators)**

EVENTS ORGANIZED

- The **Department of Electronics and Communication Engineering** organized a **one day webinar** on the topic of **"Tips and Tricks to face the Placement process"** for pre final year students. The resource person **Mr.U.D.Nareesh, Software Engineer, M/s.EmbedUR Systems India Pvt. Ltd.** gave more suggestions to attend the interviews and shared his experiences to the students on 23.02.2025. The event was coordinated by **Mr.P.Muthukumaran, Mr.D.Silambarasan** and **Mr.A.Mahadevan (ECE Department Placement Coordinators)**

PLACEMENT ACTIVITIES

- **First year students** attended the **Soft Skill Training Program** conducted by the placement cell from 17.02.2025 to 22.02.2025

BIS ACTIVITIES

- **Ms.B.Mahalakshmi** and **Mr.M.Ragul (II Year ECE)** secured **first prize** with **cash award of Rs.3000** in the event of **"Standards Castle"** organized by Bureau of Indian Standards **(World Largest Stamp Impression Painting)** on 14.02.2025
- **Ms.A.S.Nivashini** and **Ms.P.Kavya (II Year ECE)** secured **second prize** with **cash award of Rs.2000** in the event of **"Pick N Fix"** organized by Bureau of Indian Standards **(World Largest Stamp Impression Painting)** on 14.02.2025
- **Ms.V.Ramya (II Year ECE)** secured **first prize** with **cash award of Rs.3000** in the event of **"Poster Making Competition"** organized by Bureau of Indian Standards **(World Largest Stamp Impression Painting)** on 14.02.2025

ALUMNI ACTIVITIES

- **Dr. D.Menaka, Head Alumni relations and EC member, AASVCE** coordinated the **proconnect session** on **"Where the MedTech industry is moving and skills one needs to equip themselves"** by **Ms. Anu Chetty, Senior Director R&D (Johnson & Johnson, Phillips, Hewlett Packard), EEE Batch 1999** in association with AASVCE on 07.02.2025. Many students from various departments attended the session and got benefitted.

PALS ACTIVITIES

- **Seven students (II Year and III Year)** participated in the **Two-Days Faculty Student Development Program (FSDP)** on the topic of **"Technology Trends in Software Development & Maintenance"** held during 19.02.2025 to 20.02.2025

ALUMNI TESTIMONIAL

Mrs.S.Suja,
Special Educator,
Vidya Sagar,
Chennai.

"At Sri Venkateswara College of Engineering, I paved way for enriched experiences and exposure during my college days. The staff took great efforts in imparting their valuable knowledge and guided us meticulously in our preparation for further studies and versatile career paths. I am very proud and happy that I am an alumni of SVCE and very grateful for the strong foundation laid in my college days."**-Mrs.S.Suja, (Batch 1995-1999)**

NSS ACTIVITIES

- **Mrs.S.M.Mehzabeen (NSS programme Officer)** organized and attended the **NSS annual camp 2025** from 17.02.2025 to 23.02.2025 in **Government Middle School, Irungattukottai, Sriperumpudur Post** along with the NSS volunteers and other Programme officers. **Dr.M.Bindhu** delivered an insightful talk on **"Yoga and Wellness"** on 18.02.2025 about the importance of physical and mental well-being. The session included practical demonstrations of simple yoga asanas and breathing exercises to help volunteers manage stress and improve concentration. **Mrs.L.Anju** delivered an engaging session on **"Identifying problem statements based on societal needs"** on 21.02.2025. She shared her experiences from participating in hackathons, highlighting innovative, low-cost and feasible solutions for real-world challenges. The session encouraged students to brainstorm and analyze critical issues faced by communities, fostering a problem-solving mindset. Through a theme-based activity, students actively identified and discussed potential solutions, emphasizing the importance of practical, cost-effective innovations for societal development. On the seventh day, a valedictory function was organized at the **Government Primary school Thandalam** for both NSS units. **Dr.K.Pitchandi, Controller of Examinatioms** of Sri Venkateswara College of Engineering, addressed the gathering. Unit I and Unit II successfully completed all the assigned tasks, reaffirming their commitment to community service and expressing their eagerness to continue contributing in the future. A spokesperson from each unit presented reports on their activities and all NSS volunteers were awarded certificates for their active participation.

PROGRAM OUTCOMES

PO1: Engineering Knowledge: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design / Development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PROGRAM OUTCOMES

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual and as a member or leader in diverse teams, and in multidisciplinary settings.

PROGRAM OUTCOMES

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change

PROGRAM EDUCATIONAL OBJECTIVES

PEO1: Create value to organizations as an EMPLOYEE at various levels, by improving the systems and processes using appropriate methods and tools learnt from the programme.

PEO2: Run an organization successfully with good social responsibility as an ENTREPRENEUR, making use of the knowledge and skills acquired from the programme.

PEO3: Contribute to the future by fostering research in the chosen area as an ERUDITE SCHOLAR, based on the motivation derived from the programme.

PROGRAM SPECIFIC OUTCOMES

PSO-1: An ability to apply the concepts of Electronics, Communications, Signal processing, VLSI, Control systems etc., in the design and implementation of application oriented engineering systems.

PSO-2: An ability to solve complex Electronics and communication Engineering problems, using latest hardware and software tools, along with analytical and managerial skills to arrive appropriate solutions, either independently or in team.

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PROGRAM OFFERED BY THE DEPARTMENT

- **B.E. in Electronics and Communication Engineering**
- **M.E. in Communication Systems**
- **Ph.D / MS (by Research)**

EDITORIAL BOARD

CHIEF EDITOR

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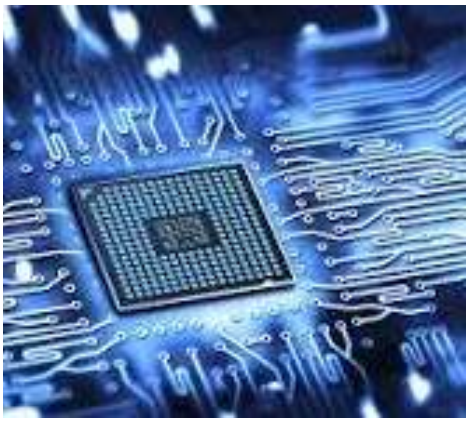
Sri Venkateswara College of Engineering

Autonomous Institution, Affiliated to Anna University, Chennai
Approved by the AICTE, Accredited by NAAC

ELECTRONICS AND COMMUNICATION ENGINEERING

ABOUT THE DEPARTMENT

The Department of ECE was started in the year 1985 and is presently accredited by the NBA. The postgraduate program (M.E) in Communication Systems was started in 2002. There are about 38 faculty members in the department and 14 of them are doctorates. The department is well equipped with lab facilities and software tools like IE3D, ADS, CST Studio, Lab View, Tanner Tools, Cadence, MATLAB, and Prototype Machine.



SALIENT FEATURES OF ECE

- The Program has been accredited by the NBA since April 2002.
- Recognized by Anna University, Chennai as an approved research centre for Ph.D. and MS (by Research) with effect from May 2009.
- The major thrust areas of research are RF and Microwave Engineering, Wireless Networks, Network Security, VLSI, Cognitive Radio, Image & Signal Processing, Neural Networks & Soft Computing, Embedded Systems & IoT, Machine Learning, Nano Technology, Robotics, and Artificial Intelligence.
- The department is doing a good number of consultancy work in the field of PCB Prototyping and RF measurements using a Network Analyzer.
- On average over 75 companies visit our department for campus placements External Research grant of Rs 48.26 Lakhs received from ISRO and Cognizant Technology Solutions in the last five years for carrying out various projects.
- Students actively participate in research projects related to Wireless Communications, Networking, Embedded Systems & IoT, Virtual Reality, Robotics, Drones etc.
- Student Counselling Service at SVCE is committed one to promote the mental health and well-being of our students by providing accessible, quality mental health services.
- Student counsellors are available on campus for confidential counselling to all students.
- The department has signed over 12 MOUs with reputed companies to ensure the Industry Institute Interaction.
- Training programs are being conducted to enhance the employability skills of the students and also to achieve good placement in various Industries.

MESSAGE FROM HoD's DESK

The Department of ECE consistently does a commendable job in disseminating the latest knowledge and inviting specialists from diverse domains for discussions on the most recent advancement and trends besides conducting regular classes. We hope every student who visits our department has an engaging, motivating and positive experience. We consistently strive to ensure that instructors and other staff personnel possess the necessary abilities and knowledge to stimulate their students' intellectual curiosity, creativity and critical thinking. I hope you enjoy your time here and thoroughly use our amenities for promising career development

Dr. G.A. SATHISH KUMAR HoD/ECE

VISIT WWW.SVCE.AC.IN

Contact US

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admissionenquiry@svce.ac.in

SCAN & APPLY

CHOOSING SVCE: A PATHWAY TO SUCCESS AND GROWTH

- One of the prestigious and top ranked Autonomous engineering institution affiliated to Anna University, Chennai.
- Accredited by NAAC and NBA.
- Over 28 % of the alumni work abroad.
- Highest placement offers of Rs.25 LPA and 20 LPA in PayPal and Amazon.
- Highly qualified faculty and staff with an average experience of over 20 years.
- World class Laboratories to foster innovation and research.
- Alumni working in fortune 500 companies like Google, Microsoft, Facebook, Mercedes Benz, INTEL, etc.,
- State-of-the- art-campus with modern amenities in the industrial corridor of Chennai.

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A Bachelor's Degree in Electronics and Communication Engineering with expertise in one of the following specialization

HONOURS SPECIALIZATION

Wireless Communication Systems

VLSI

Antenna and Microwave Technology

Signal Processing and Data Science

IoT Systems and its Applications

Networking and Security

Our Recruiting Companies

accenture, amazon, Deloitte., Infosys, wipro, Ford, Cognizant, CATERPILLAR, SCHWING Stetter, FLSmidth, PayPal, verizon, L&T, SIEMENS, ASHOK LEYLAND, ABB, ThoughtWorks, Tech Mahindra, Atos Syntel, Capgemini, TCS 50, YAMAHA, TechnipFMC, HEXAWARE, freshworks, Informatica, vedanta, wood., SAINT-GOBAIN, HCL, HYUNDAI, Honeywell, TVS, flex., TEMENOS

NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE, PennState Great Valley, THE UNIVERSITY OF MELBOURNE, WISCONSIN, UNSW AUSTRALIA, Northeastern University, UNIVERSITY OF MARYLAND

Top Universities where our students are pursuing Higher Education

MINORS

Artificial Intelligence and Machine Learning and Machine Learning

Data Science and Analytics

Robotics

Semiconductors

Advanced Communications

Bio-medical Signal Processing

And Many More....

Sri Venkateswara College of Engineering

Autonomous Institution, Affiliated to Anna University, Chennai
Approved by the AICTE, Accredited by NAAC

DEPARTMENT OF ELECTRONICS AND COMMMUNICATION ENGINEERING

M.E COMMUNICATION SYSTEMS

ADMISSIONS OPEN FOR THE ACADEMIC YEAR 2024-25

SVCE started the Department of Electronics and Communication Engineering in the year 1985. The Department offers B.E. in Electronics and Communication Engineering and M.E. in Communication Systems. It is also approved as aResearch Centre in Ph.D and MS (by Research) programmes by Anna University, Chennai.

ABOUT SVCE

Sri Venkateswara College of Engineering (Autonomous) is a premier self-financing institution started in the year 1985. The college offers 10 B.E/B.Tech Programmes and 10 M.E/M.Tech Programmes in Engineering and Technology. The Programs are approved by AICTE and the college is affiliated to Anna University, Chennai. The college is also accredited by National Assessment and Accreditation Council (NAAC). Many programs are accredited by National Board of Accreditation (NBA). The college is also certified by ISO 9001:2015. The institution received the autonomous status in the year 2016. Our Vision is to be a leader in Higher Technical Education and Research by providing state-of-the-art facilities to transform the learners into global contributors and achievers.

ADMISSION INFORMATION

A pass in a recognized Bachelor's degree or equivalent in the relevant field and should have obtained atleast 50% in the qualifying degree examination. Admissions are through Tamil Nadu Common Entrance Test (TANCET) conducted by Anna University or GATE

RESEARCH GRANTS

Our faculty members have received major external research grants from prestigious organizations such as ISRO, AICTE, DRDO, and TNSCST, etc., to the tune of ₹56.26 Lakhs in the last three years for doing various funded projects.

SCHOLARSHIPS FOR PG STUDENTS

- Tution fee (Rs. 50,000/year) waiver for 30% of the students of sanctioned class strength on merit basis, as applicable.
- Management Scholarship for tution fees and assistance for books and instruments.
- GATE Scholarship of Rs. 12,400 per month for students having valid GATE Score. Sponsorships for students to attend conferences.
- Intramural M.E/M.Tech Student Research Grant to carry out innovative projects.

RESEARCH AREAS

Join the Revolution: Transform Communication Systems with SVCE

- Biomedical Instrumentation
- Computer Networks & Network Security
- Digital Signal Processing & Image Processing
- Embedded Systems
- Fiber Optic Communication
- IoT (Internet of Things)
- Nano Electronics
- RF & Microwave Engineering
- Robotics & Artificial Intelligence
- VLSI & Microelectronics
- Wireless Communication Networks

MAJOR RECRUITERS

ERICSSON, CSS CORP, TAFE, amazon, TATA COMMUNICATIONS, ZOHO Work. Online, Infosys, Cognizant, WIPRO, accenture High performance. Delivered., L&T Infotech, HCL