



# PIE Tech

**POLLACHI INSTITUTE OF ENGINEERING AND TECHNOLOGY**

(Approved by **AICTE** and Affiliated to **Anna University**)

107/1B, Dharapuram Main Road, Poosaripatti, Pollachi, Coimbatore - 642 205.

*sky is the limit*



**INSTITUTION'S  
INNOVATION  
COUNCIL**  
(Ministry of HRD Initiative)



# ***Impressions***

Issue – July 26 – Edition 70

**e-NEWS LETTER**

## From the Editor's Desk

“**Impressions**” aims to bring out the activities & happenings in our Institution. We are elated to present the seventieth edition of “**PIE Tech – Impressions**” for the month of July-2026.

### 1. Tamil Mandram :

On behalf of the Tamil Mandram , an inauguration programme was conducted on July 30th, 2026, marking the beginning of the academic year 2026-27. The event was graced by Dr. P. Amsaveni, Assistant Professor, Department of Tamil and Yoga, Arjun College of Engineering, Pollachi, as the Guest of Honour. She shared valuable insights on yoga and Tamil terminology, enriching students' understanding of both disciplines. The programme also featured the introduction of the newly appointed Tamil Mandram Office bearers for the current academic year.



### 2. Alumni Talk :

The Department of Computer Science and Engineering hosted an Alumni Talk- Campus to Career delivered by Ms.K.Anushiya Devi, a Technical Software Engineer at Zoho, Coimbatore, on 18<sup>th</sup> July 2026.

### 3 . Mechanical Sciences Association Inauguration:

The Mechanical Sciences Association was inaugurated on 23<sup>rd</sup> July 2026, with Mr Deepak Ravikumar, CEO and Co-Founder of Learnlike, Coimbatore, as Chief Guest. He delivered a special address on Industry 4.0 Skills for Mechanical & Civil Engineers, in which he stressed the importance of emerging technologies and industry oriented skills for the career development of Mechanical engineering students.



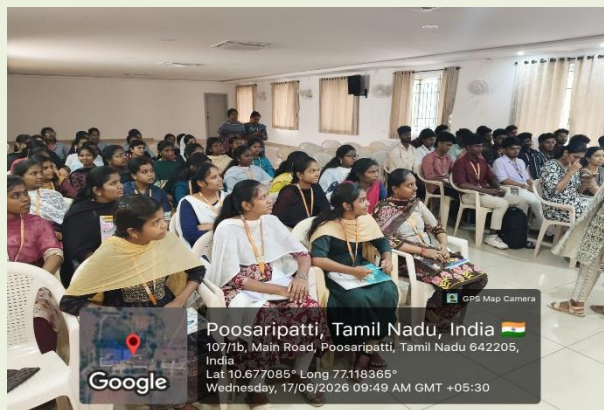
#### 4. TNEA 2026 Nodal Officer Meeting:

Dr. A. Dhanamurugan, Professor & Principal and Mrs. Menaka Devi, Asst. Professor -ECE attended the TNEA 2026 Nodal Officer Meeting held at Anna University on 16.07.2026. The meeting focused on important guidelines and procedures related to the TNEA 2026 counselling process.

#### 5. Training and Placement Cell:

Training and Placement Cell Signed an MoU with Byts Services India Pvt Ltd to conduct 30 days of hands on Training in the field of Java with DSA for the final year CSE, ECE, AI&DS Students.





## 6. International Yoga Day Celebration 2026:

International Yoga day was celebrated in our college premises. Mrs.Radha Anbalagan , Certified Yoga Trainer, Sri Sri School of Yoga performed several yoga poses.





## Faculty Development Programmes :

1. Shanthi.T, Assistant Professor in the Department of Computer Science and Engineering, successfully participated in the six day Faculty Development Programme on Cloud Engineering organized by Government College of Technology, Coimbatore, held from July 27, 2026 to August 1, 2026.

2. Suvetha V., Assistant Professor in the Department of Information Technology and Engineering, took part in the six day Faculty Development Programme on Cloud Engineering organized by Government College of Technology, Coimbatore, from 27 July 2026 to 01 August 2026.

3. Mr. T. Karthick Kumar participated in the Faculty Development Programme on Product Conceptualization and Prototyping, conducted at the Anna University Regional Campus in Coimbatore from 27 July 2026 to 1 August 2026. The programme was organized under the Tamil Nadu Skill Development Programme and focused on building practical skills in product ideation, design, conceptualization, and prototyping. The course also aligns with skill development initiatives covering product conceptualization and prototyping.

4. Mrs. Vijayalakshmi, Assistant Professor in the Department of Science and Humanities, successfully completed the Five-Day Online Faculty Development Programme (FDP) on "Enhancing Chemistry Education and Research Through AI-Driven Technologies," organized by the Department of Science and Humanities, Nehru Institute of Technology (Autonomous), Coimbatore, from 13 to 17 July 2026.

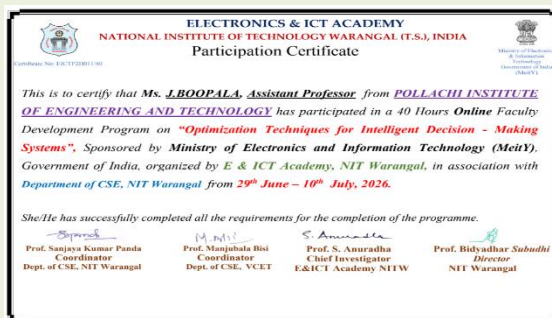




5. Ms. J. Boopala, Assistant Professor, AI&DS has attended a 5 days Faculty Development Programme (FDP) on “Microsoft Power BI – Data Analyst Associate” organized by ICTACT, held from July 13, 2026 to July 17, 2026.



6. Ms. J. Boopala, Assistant Professor, AI&DS has participated in a 40hr Online Faculty Development Programme (FDP) on “Optimization Techniques for Intelligent Technology” sponsored by E&ICT Academy, NIT Warangal, held from June 29, 2026 to July 10, 2026.



7. Ms. E. Perarul Sarubala, Assistant Professor, AI&DS has successfully completed an online course on “AI – Data Engineering Analyst”, offered by NASSCOM through the Skill India Digital Hub, on July 3, 2026.

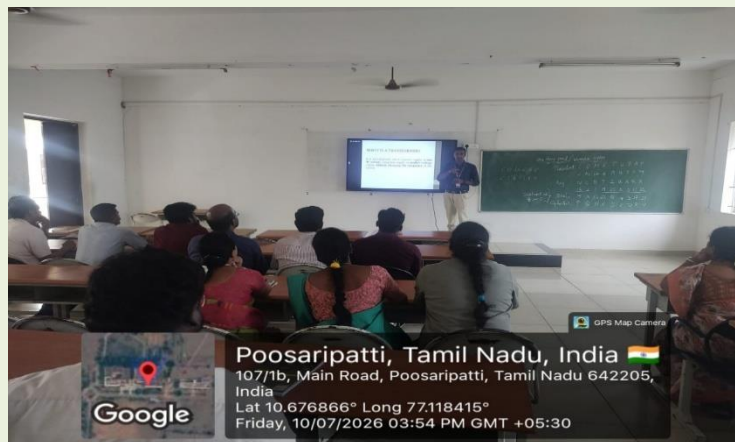


## Faculty Research Publications and Seminars

### Seminars:

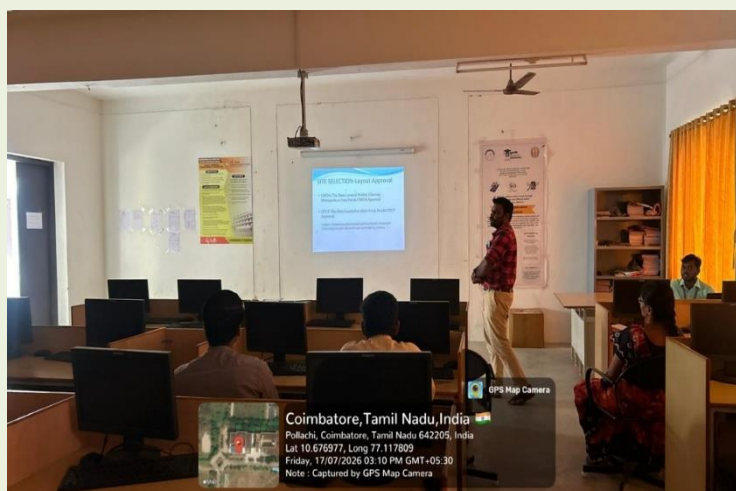
#### Seminar on Solid-State Transformer – The Future of Power Distribution

Research Seminar on Solid-State Transformer – The Future of Power Distribution was delivered by Mr. V. Sureshkumar, AP/EEE, on 10.07.2026. The discussion highlighted emerging applications and the prospective trajectory of solid-state transformer technology within power distribution.



#### Research Seminar on “Ideal House”

Mr. S. Rajeshkumar, AP/Civil, presented a research seminar on Ideal House on 17 July 2026, focusing on modern concepts, sustainable practices, and the fundamental features of an ideal residence.



## Research Seminar on “Modern Plastics”

Mr. P. Rajeshvinothkumar presented a research seminar titled Modern Plastics on 24 July 2026, examining the latest advancements, uses, and innovations within contemporary plastics.



## Research Seminar on “Smart Wearable – The Future of Personalized Healthcare”

A research seminar titled **Smart Wearable The Future of Personalized Healthcare** was presented by **Mr. S. Mohanram AP/ECE** on **31.07.2026**. The session emphasized smart wearable technologies and their impact on personalized healthcare.



## Research Publications :

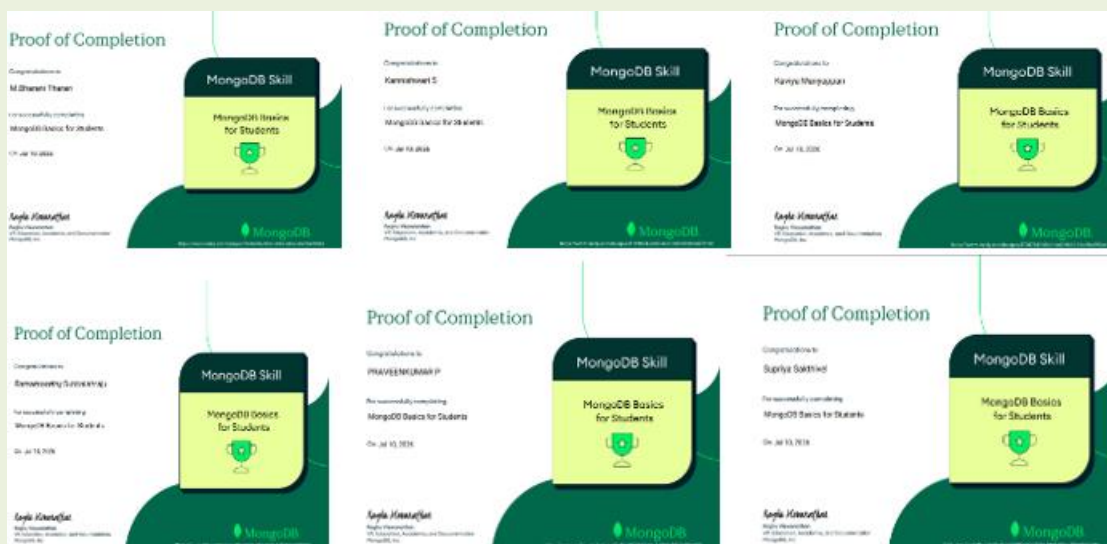
**1. Dr. P. Muthusamy, Associate Professor and Dean of Mechanical Sciences**, has published an Original Research article in Environmental Progress & Sustainable Energy, a journal covering sustainable energy research. The paper, titled Dual Mode Operation of a Sub-Cooler Vapor Injection Assisted Direct Expansion Solar-Ambient Hybrid Source Heat Pumps in Tropical Climates, was published online in **July 2026 with DOI 10.1002/ep.70564**.



**2. Mr. T. Karthick Kumar, AP/Mechanical**, has published a research article titled “CFD Analysis of Thermo-Hydraulic Performance in Parabolic Trough Receiver with Porous Inserts” in the Journal of the Brazilian Society of Mechanical Sciences and Engineering. The study investigates enhancing the thermo-hydraulic performance of parabolic trough solar receivers through CFD analysis using porous inserts, and was published in May 2026 with DOI: 10.1007/s40430-026-06522-3.

**3. Ms. Minu Shaji**, Assistant Professor in the Department of Science and Humanities, **delivered a research paper entitled 'The Role of Learning and Development in Building Sustainable Workplaces'** at the International Conference on Research Innovations in Commerce for a Sustainable Future, organized by the Research and Development Cell of Arunachala Arts and Science Women College Vellichanthai, on 3 August.

### Students' Achievements:



- 1. Totally 6 of II Year, B.Tech AI&DS students** have completed "**MongoDB Basics for Students**", a certification course by MongoDB, Inc. This course covered the fundamentals of NoSQL databases and MongoDB, helping students build a strong foundation in modern database technologies.
- 2. Bhavadharani M S**, a second-year student in the Computer Science and Engineering department, has successfully finished the **Software Engineering** course that wrapped up on **25 July 2026**.
- 3. Janagiraman.S IV CSE** has successfully completed the Internship program in “**web Development**” at **Way2Me** from **17.06.2026 to 17.07.2026**.

## **Faculty Forum:**

### **I) New Wave in Biometric systems**

The "New Wave" in biometric systems marks a shift from static physical traits to AI-driven behavioral analysis, internal physiology, and continuous verification. Driven by the surge in deepfake fraud, this evolution converts identity verification from a single login check into an ongoing, invisible security layer that analyzes your typing rhythm, device grip, and gait. Simultaneously, advanced systems are moving beneath the skin to map unhackable internal markers like palm vein structures, heartbeat electrical signatures (ECG), and brainwave patterns (EEG). By processing these inputs directly on-device hardware using wave-diffraction networks, the next generation of biometrics eliminates the need to store vulnerable digital templates in the cloud, paving the way for hyper-secure, contactless commerce.

The modern biometric landscape is moving away from static physical templates toward continuous, behavior-based authentication. Instead of relying on a single facial scan or fingerprint touch at login, next-gen security systems monitor user interactions invisibly in the background. Artificial intelligence algorithms track micro-behaviors, such as the exact rhythm of a user's keystrokes, the specific angles at which they swipe a touchscreen, and their walking gait. This creates a fluid, continuous identity profile that instantly locks a device or system if the behavioral patterns suddenly change, neutralizing risks from session hijacking or stolen active devices.

**Prepared by**

**Anitha S,  
Assistant Professor,  
Department of Computer Science and Engineering**



### **II) Prominence of Digital Twin Technology**

Digital Twin Technology is an advanced innovation that creates a virtual model of a physical object, system, or process. This digital replica is connected to the real-world object through sensors and the Internet of Things (IoT), allowing it to receive real-time data and accurately reflect the current condition of the physical asset. By combining technologies such as Artificial Intelligence (AI), cloud computing, big data analytics, and simulation, digital twins help organizations monitor performance, predict failures, and optimize operations without interrupting actual processes.

This technology is widely used in manufacturing, healthcare, automotive, aerospace, energy, and smart cities. For example, factories use digital twins to monitor machines and schedule predictive maintenance, while hospitals use them to simulate patient conditions and improve treatment planning. Smart cities employ digital twins to manage traffic flow, energy consumption, and public infrastructure more efficiently. The major advantages of Digital Twin Technology include reduced maintenance costs, improved efficiency, increased safety, better decision-making, and enhanced product quality. As industries continue to adopt Industry 4.0 and digital transformation, Digital Twin Technology is becoming an essential tool for innovation, sustainability, and intelligent system management, making it one of the most promising technologies of the future.

**Prepared by,**  
  
**Jayanthi K,**  
**Head of the Department,**  
**Department of Information Technology**



### **III) Moving from Silent Observers to Confident Speakers**

Ever notice how chatting online feels so natural, but then you get up on stage or in an interview and just freeze? It's wild how many students deal with stage fright, stress about grammar, and that exhausting habit of translating everything from their first language to English. When you're stuck trying to build perfect sentences while translating each word, it's like your brain hits a wall. That can be a major confidence killer.

The main issue? Treating speaking English like it's a grammar test. Think of it like learning to drive. You could read every manual there is about the steering wheel and brake pedals, but you'll never really learn until you get behind the wheel and drive. Just knowing the theory won't cut it. Actually, practicing is what gets you there. In speaking, getting fluent helps you with grammar; it's not the other way around.

If you want to break free from that translation trap, start thinking in English more. Try talking to yourself throughout the day in simple English. Whether you're alone or just in your head, narrating your actions can help you skip that translation step. And when it's time to speak up, forget about memorizing every single word. Just hone in on the main ideas, take a deep breath to steady your nerves, and if looking people in the eye feels too daunting, just glance at the tops of their heads.



You're already good at expressing your thoughts online, so you've got solid ideas and a decent vocabulary to work with. Fluency is a skill that builds with practice, not by overthinking. By letting go of the perfect grammar obsession and cutting out those mental translations, you can easily take what you write and turn it into a confident spoken voice.

**Prepared By,**

**Ms. Minu Shaji  
Assistant Professor ,  
Department of Science and Humanities**



#### **IV) Grid-Scale Battery Energy Storage Systems: Powering the Future of Renewable Energy**

The rapid growth of renewable energy sources such as solar and wind has transformed the global power sector. However, since these sources are intermittent and depend on weather conditions, maintaining a stable electricity supply has become a major challenge. Grid-Scale Battery Energy Storage Systems (BESS) have emerged as a revolutionary solution by storing excess electricity generated during peak production and supplying it back to the grid whenever demand exceeds generation. As countries strive towards clean energy goals, battery storage has become a key component of modern power systems.

Battery Energy Storage Systems use advanced lithium-ion and other emerging battery technologies to improve grid reliability, reduce power outages, and support renewable energy integration. During the daytime, surplus solar energy can be stored in batteries instead of being wasted. The stored energy is then supplied during evening peak hours or when renewable generation is low. Apart from energy storage, BESS also provides services such as frequency regulation, voltage support, peak shaving, and emergency backup power, making electrical grids smarter and more resilient.

India has recognized the importance of energy storage in achieving its ambitious renewable energy targets. The Government of India is encouraging investments in large-scale battery storage projects through supportive policies and incentive schemes. Several states, including Tamil Nadu, Gujarat, Rajasthan, and Karnataka, are actively planning Battery Energy Storage projects to strengthen renewable energy integration. With Tamil Nadu being one of India's leading producers of wind and solar energy, battery storage systems will play a crucial role in ensuring reliable and uninterrupted power supply while reducing dependence on conventional fossil-fuel-based generation.

For engineering institutions, this emerging technology opens exciting opportunities for Electrical and Electronics Engineering students. Careers are expanding in battery technology, power electronics, battery management systems, smart grids, electric vehicles, renewable energy integration, and energy management systems. Students should strengthen their knowledge in power systems, power converters, control systems, energy storage technologies, and artificial intelligence applications in smart grids. Industry collaborations, research projects, and practical training will prepare graduates for the growing demand in this sector.

Grid-Scale Battery Energy Storage Systems represent the next major milestone in the clean energy transition. By enabling efficient utilization of renewable energy, improving grid stability, and supporting sustainable development, BESS will become an essential part of future power networks. This is an ideal time for students, educators, and researchers to develop expertise in this rapidly evolving field and contribute towards building a cleaner, smarter, and more reliable energy future.

**Prepared By,**

**Mr. V.Sureshkumar,  
Assistant Professor – EEE,  
Pollachi Institute of Engineering and Technology**



## **The Creative Hub :**

### **I) Prompt Engineering - A Smart Skill for Every Student**

Artificial Intelligence has become a major part of education today, with students using AI tools to learn concepts, write code, and generate ideas. But the quality of an AI's response depends heavily on how the question is asked — this skill of framing clear, effective instructions is called Prompt Engineering.

It helps in many areas of student life: understanding tough subjects, debugging code, preparing presentations, summarizing notes, and generating project ideas. Giving proper context instead of vague questions leads to far better results and saves valuable time.

As AI grows across industries, prompt engineering is becoming an essential skill — not just for AI professionals, but for every student aiming to use AI effectively in academics and future careers.

**by M. Mohammed Rafi, III Year, AI & DS**

## II) THROUGH THE LENS



by A. Reenamol, II Year, AI & DS



by M. Prajeesh, II Year, AI & DS



by M. Liyalini, II Year, AI & DS

III) அவனுடைய வெற்றிகள்  
எதிர்பார்க்கப்படுபவை.

அவன் எப்போது கொடுக்கிறானோ  
அப்போது தான் அவன் புகழப்படுகிறான்.

அவன் எப்போது சாதிக்கிறானோ அப்போதுதான்  
அவன் நேசிக்கப்படுகிறான்.



பா. சஞ்சய்  
IV year CSE

IV) பார்த்து வந்திருக்க வேண்டியது தானே.  
கூட்டம் கேட்டது  
தடுக்கி விழுந்த பார்வையற்றவரை பார்த்து...



M.Gowtham  
III Year CSE



#### IV) India's 98th Chess Grandmaster



“ ASWATH S “ is a talented young chess player from Tamil Nadu who has brought great pride to India. In 2026, he achieved a historic milestone by becoming India's 98th Grandmaster, one of the highest titles in chess. His success highlights the strong chess culture of Tamil Nadu. He achieved the International Master (IM) title in 2023 after performing well in international tournaments. He earned his Grandmaster norms by performing excellently in global competitions: First norm at Grenke Open (Germany, 2025)...Second norm at Budapest tournament (2025)...Final norm at Pune International GM Tournament (2026)....In the final round of the Pune tournament, he won an important match and secured his Grandmaster title with a score of 7/9 points. Aswath faced challenges during his journey. He even took a break from chess to focus on his Class 10 board exams, showing his discipline and dedication to both studies and sports.

The Times of India - Despite these challenges, he returned stronger and achieved success through continuous practice and determination...

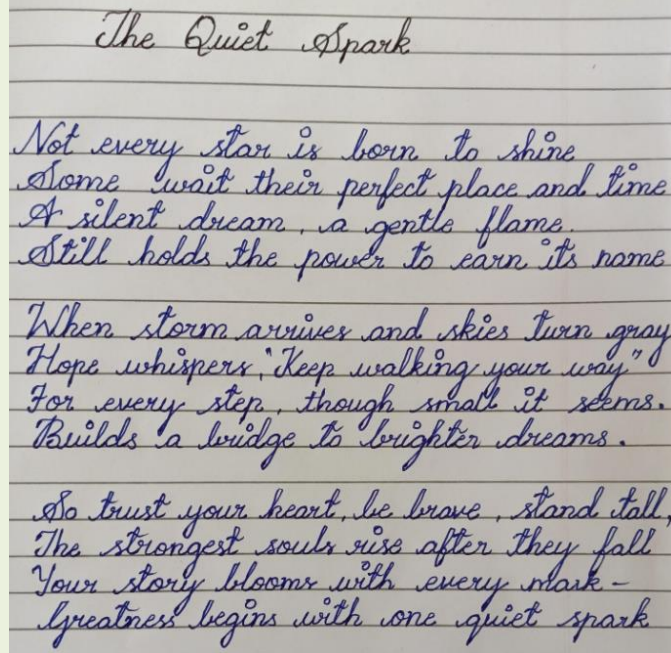
Playing Style and Strength:

Known for calm thinking and strong strategy,  
Good at handling pressure situations,  
Balanced playing style: both attacking and defensive,  
Peak rating around 2500+ (FIDE) ....

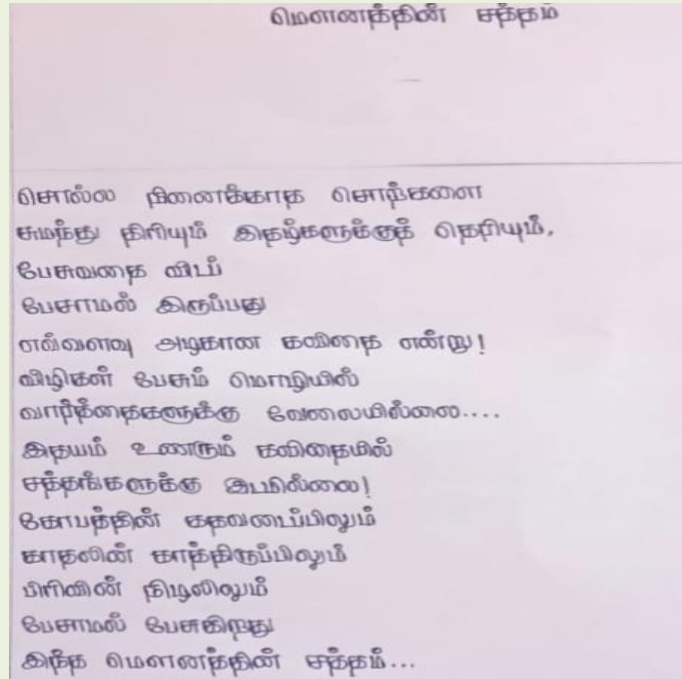
His style reflects maturity beyond his age

**Presented by**  
**N.Gokila ,II – CSE**

V) PEN & INK

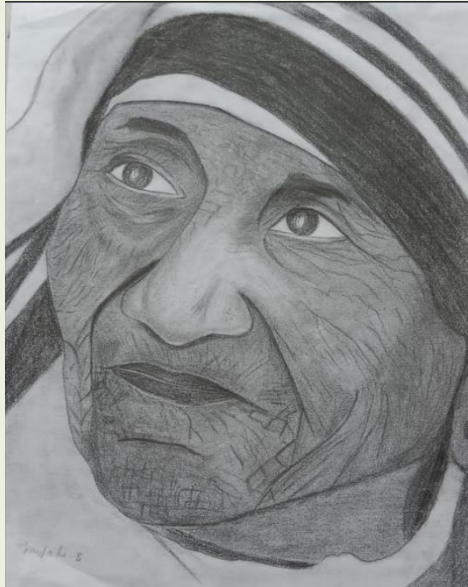


By M. Birundha, III Year, AI & DS



By P. Karthikeyan, III Year, AI & DS

## SKETCH CORNER



**B. Kavya Sri, III Year, AI & DS**

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