

# **Experiential Learning**

Report submitted to the

## **VIT Bhopal University**

**Bachelor of Technology**

**in**

**Computer Science and Engineering**

*Submitted by*

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**November, 2025**

### **Declaration**

I, Aarul Kumar, bearing the Registration Number *23BCE10857* hereby declare that this report of “*Experiential Learning*” represents my original work carried out as an undergraduate student at VIT Bhopal University. To the best of my knowledge, it contains no material previously published or written by another person, nor any material presented for the award of any other degree of VIT Bhopal University or any other institution. Any contribution made to this report by others, with whom I have worked at VIT Bhopal University or elsewhere, is explicitly acknowledged in the report.

19<sup>th</sup> November 2025

*Aarul Kumar*

VIT Bhopal University

## **Acknowledgment**

I would like to extend my heartfelt gratitude to everyone who contributed to the success of the recent industrial visit organized at cities, Pune and Hyderabad. The visits, which took place from 27 October to 7 November, was an invaluable learning experience for me. The industrial visits were a significant milestone in my academic journey, and it wouldn't have been possible without the collective effort of our college community, the accommodating host companies and other supporters.

First and foremost, I would like to express my deepest appreciation to all the companies for opening their doors for us and providing us with an opportunity to gain real-world insights into their industry. The warm welcome, informative presentations, and interactive sessions offered by your team were truly enlightening and inspiring.

I also want to thank our dedicated faculty members and staff who worked tirelessly to plan and coordinate the visits. Their commitment to providing us with a practical and educational experience is commendable. Their guidance and supervision during the visit ensured that it was both safe and enriching.

Last but not the least I would like to thank my parents, friends, faculties and other supporters who have helped me directly or indirectly throughout my industrial visits. I look forward to continuing to provide such enriching experiences for us in the future and strengthening our ties with the industrial community.

Thank you once again for your invaluable contributions.

*Aarul Kumar*

## **Summary of Your Experiential Learning**

Our recent industrial visits to Hyderabad and Pune provided an enlightening and enriching experience for our group of students. These two cities, renowned for their robust economies and diverse industrial landscapes, offered us unique perspectives on several sectors.

In Hyderabad, we were granted the privilege of touring cutting-edge technology firms and research facilities. Our visits to ISRO, BSNL, T-HUB, T-WORKS, allowed us to witness vast dimensions of engineering, industries and research. These experiences deepened our understanding of innovation, automation, and the pivotal roles these industries play in shaping the future.

Pune, in contrast, highlighted its prominence in the automation sector. Our excursions to micro-controller and various industries provided us with an up-close look at the intricacies of programming, automation, production lines and quality control processes. Additionally, we were greatly impressed by the engineering excellence on display, which enhanced our comprehension of their principles.

Moreover, the rich cultural heritage and diversity of both Pune and Hyderabad added a distinctive cultural dimension to our learning experiences. We had the opportunity to immerse ourselves in the local culture, savour regional cuisine, and engage in informative discussions with professionals who graciously shared their expertise and experiences.

### **Keywords:**

- Artificial Intelligence
- Cloud Computing
- Cyber Security
- Data Analytics
- Machine Learning
- Software Development

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### **PUNE**

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#### Conclusions

**City Choice – 1**

**HYDERABAD**

## **Day – 1 Report**

### **1.1.1 Industry Name – T-Works**

### **1.1.2 Objectives**

- Understand the operational framework of T-works as India's largest prototyping centre and its role in fostering hardware innovation and startup ecosystems.
- Explore advanced prototyping technologies, including 3D printing, CNC machining, laser cutting, and electronics labs, to gain hands-on exposure to rapid product development.
- Learn about maker culture, design thinking methodologies, and collaborative innovation spaces that support entrepreneurs and engineers in transforming ideas into tangible prototypes.

### **1.1.3 Learning outcome**

- Gained practical understanding of rapid prototyping workflows using advanced tools like 3D printers, CNC machines, and laser cutters, enabling efficient transformation of concepts into functional hardware prototypes.
- Developed insights into collaborative innovation ecosystems, design thinking principles, and effective resource management in a government-supported makerspace, enhancing readiness for hardware entrepreneurship.

#### 1.1.4 Photographs (Paste 4-5 good photographs of hands on experience/visit)



#### 1.1.5 Feedback of the day – 1

The visit to T-works provided hands-on exposure to cutting-edge prototyping tools and deepened my understanding of hardware innovation ecosystems. Interactive sessions on design thinking and maker culture inspired creative problem-solving and collaboration. The well-structured tour and expert insights highlighted effective resource management in large-scale makerspaces.

## **Day – 2 Report**

### **1.2.1 Industry Name – BSNL Data and Training Centre**

### **1.2.2 Objectives**

- **Understanding Telecommunications Infrastructure:** Gain knowledge about the physical infrastructure required for telecommunications, including the network of telephone exchanges, data centres, and transmission facilities that enable communication services.
- **Learning about Technology:** Get an overview of the technology used in telecommunications, such as landline phones, mobile networks, broadband internet, and optical fibre cables.
- **Service Offerings:** Learn about the range of services offered by BSNL, including landline telephony, mobile services, broadband internet, and value-added services.
- **Government-Owned Enterprise:** Understand the role and significance of BSNL as a government-owned telecommunications enterprise in India's communication landscape.

### **1.2.3 Learning outcome**

- Gain knowledge about the physical infrastructure required for telecommunications, including the network of telephone exchanges, data centres, and transmission facilities that enable communication services.
- Get an overview of the technology used in telecommunications, such as landline phones, mobile networks, broadband internet, and optical fibre cables.
- Learn about the range of services offered by BSNL, including landline telephony, mobile services, broadband internet, and value-added services.

#### 1.2.4 Photographs (Paste 4-5 good photographs of hands-on experience/visit)



#### 1.3.5 Feedback of the day – 3

The training at BSNL Hyderabad was highly informative and beneficial. The staff was knowledgeable and supportive, and the hands-on opportunities were valuable.

## Day – 3 Report

### 1.3.1 Industry Name – ISRO

### 1.3.2 Objectives

- **Space Science Exposure:** Provide students with firsthand understanding of India's space-based remote sensing capabilities and satellite data applications.
- **Earth Observation Techniques:** Demonstrate the processes involved in acquiring, processing, and analysing satellite imagery for various national development projects.
- **Geospatial Technologies:** Showcase advanced geospatial tools, including GIS, photogrammetry, digital image processing, and cartography.
- **Satellite Data Applications:** Explore how remote sensing supports agriculture, water resource management, disaster monitoring, urban planning, and environmental studies.
- **Research & Innovation:** Highlight ISRO's R&D initiatives in sensor technologies, data modelling, geospatial analytics, and space-based monitoring systems.
- **National Program Support:** Explain NRSC's role in supporting national missions such as Bhuvan, Disaster Management Support (DMS), and Natural Resource Inventory.
- **Data Security & Protocols:** Understand data security practices, handling of sensitive geospatial information, and technological systems ensuring accuracy and reliability.

### 1.3.3 Learning outcome

- Understood end-to-end satellite remote sensing workflows, including data reception, processing, classification, and thematic mapping at NRSC Hyderabad.
- Gained insights into GIS, digital image processing, and geospatial modelling, and how they support real-world applications like land-use mapping and disaster prediction.
- Explored national-level space programs and portals such as Bhuvan, MOSDAC, and India's Earth Observation satellites and their applications.
- Developed awareness of space-based environmental monitoring systems, including drought assessment, flood mapping, forest cover analysis, and climate studies.

### 1.3.4 Photographs (Paste 4-5 good photogrphahs of hands on experience/visit)



### 1.3.5 Feedback of the day – 2

I gained valuable exposure to satellite remote sensing, geospatial technologies, and Earth observation workflows during my visit to NRSC–ISRO Hyderabad. I learned how satellite data is processed and applied in key areas such as disaster management, agriculture, and environmental monitoring. This experience enhanced my understanding of India’s space-based innovations, national missions, and the role of geospatial intelligence in real-world planning and decision-making.

## **Day – 4 Report**

### **1.4.1 Industry Name – T-hub**

### **1.4.2 Objectives**

- Explore T-Hub's role as a leading startup incubator and its ecosystem for nurturing innovation, funding, and scaling tech ventures in India.
- Gain insights into mentorship programs, investor connect initiatives, and co- working spaces that support early-stage entrepreneurs in product validation and market entry.
- Understand the integration of cutting-edge technologies like AI, IoT, and cloud platforms in startup prototyping and business model development.
- Learn about collaboration frameworks between industry, government, and academia to drive entrepreneurship, job creation, and sustainable economic growth.

### **1.4.3 Learning outcome**

- Acquired in-depth knowledge of startup incubation processes, including mentorship, funding pathways, and co-working dynamics at T-Hub, enhancing entrepreneurial readiness.
- Gained practical insights into leveraging emerging technologies like AI and IoT for rapid prototyping and scalable business model development within a vibrant innovation ecosystem

#### **1.4.4 Photographs** (Paste 4-5 good photogrpahs of hands on experience/visit)



#### **1.4.5 Feedback of the day – 4**

- The visit to T-Hub offered an immersive view of India's premier startup ecosystem and its impact on tech innovation.
- Engaging interactions with mentors and founders highlighted practical strategies for funding, scaling, and market validation.
- The vibrant co-working environment and tech-driven programs inspired a deeper appreciation for collaborative entrepreneurship.

**Choice – 2**

**PUNE**

## Day 1 Report

**1.1.1 Event/Industry Name** – Workshop on IoT and Embedded Systems Fundamentals By Mr. Samarth Kulkarni EdGate Technologies Pvt. Ltd.

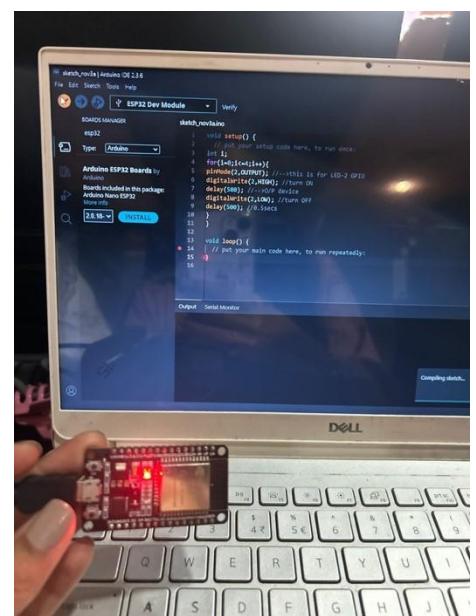
### 1.1.2 Objectives

- To understand the foundational concepts of **networking** and their relevance to IoT ecosystems.
- To gain **exposure to core embedded systems hardware components** and usage of **microcontrollers** and the concept of **bridging microcontrollers** for seamless device communication.
- To gain hands-on programming experience using the **Arduino** platform.
- To successfully establish and test basic communication protocols between devices.

### 1.1.3 Learning outcome

- **Introduction to Hardware:** This day marked the **first practical introduction to electronic hardware**, providing a foundational understanding of the physical components that constitute an embedded system.
- **Microcontrollers and Bridging:** Acquired crucial knowledge about **microcontrollers** (the "brain" of embedded devices) and their role in processing data. A key learning was the concept and usage of **bridging microcontrollers**, which are vital for establishing serial communication and facilitating the flow of data between a computer/phone and the embedded program.
- **Networking and Setup:** Successfully installed and configured the **Arduino Integrated Development Environment (IDE)** and acquired a foundational understanding of basic **networking protocols** essential for connected IoT devices.
- **Basic Communication:** Achieved the first successful implementation of an embedded system application by sending and receiving a "**Hello**" message signal directly from a **phone to a laptop**. This exercise demonstrated the basic architecture and communication flow in a simple IoT environment.

#### 1.1.4 Photographs (Paste 4-5 good photographs of hands-on experience/visit)



#### 1.1.5 Feedback of the day – 1

The workshop served as an excellent and highly valuable first step into the world of Internet of Things and embedded systems. The structure was effective, beginning with clear **networking fundamentals** and then transitioning into the practical **hardware introduction**. **Learning about microcontrollers and understanding their bridging capability for the first time** was a highly rewarding and foundational experience, successfully linking software commands to **physical hardware interaction**.

The hands-on exercise with the Arduino platform was engaging and immediately provided a clear sense of how embedded systems operate. The instructors' guidance was clear and ensured complex hardware and software concepts were accessible even for beginners.

## Day 2 report

### 1.2.1 Industry Name – Data Centre, BSNL ZTTC

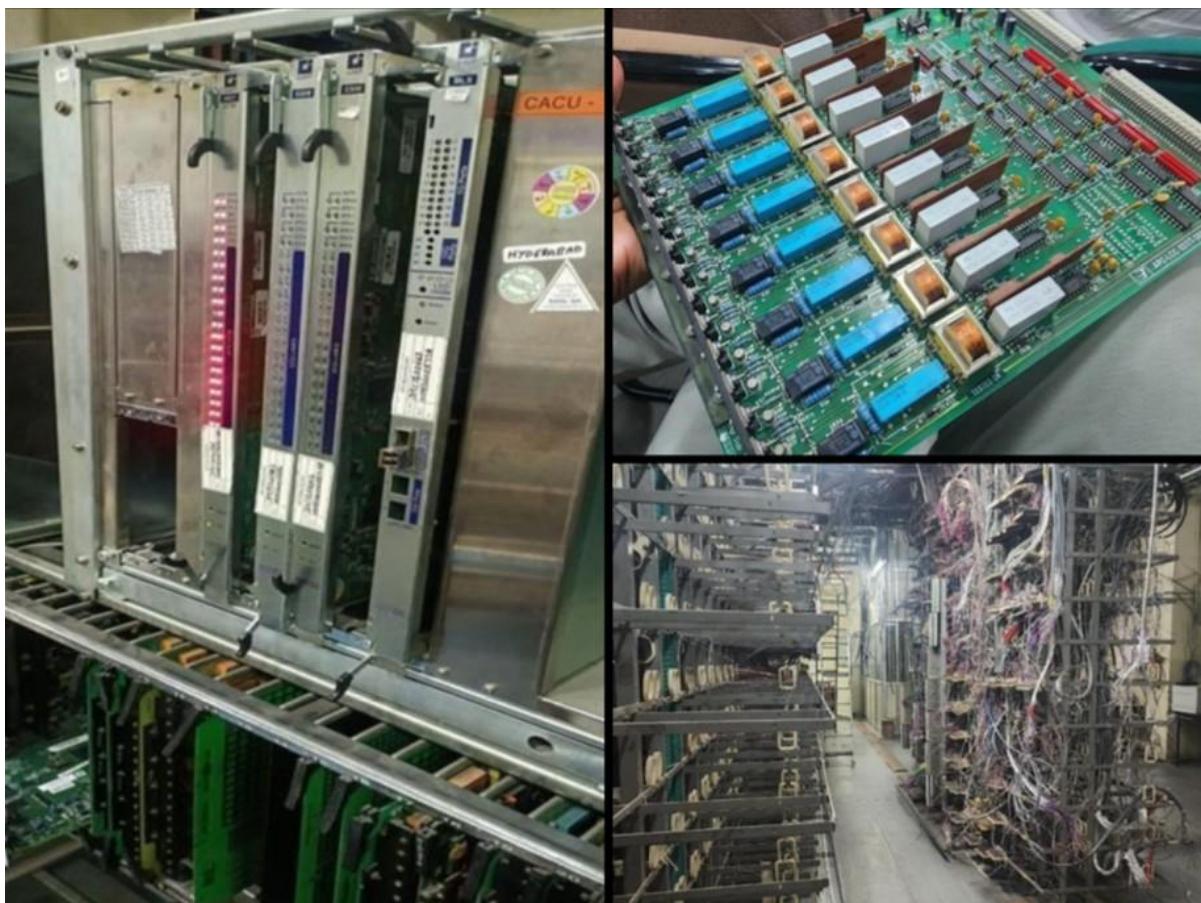
### 1.2.2 Objectives

- **Educational Insights:** The BSNL Data Centre serves as a crucial hub for data management and telecommunications services in India. As a part of Bharat Sanchar Nigam Limited (BSNL), the centre is responsible for storing, processing, and managing vast amounts of data critical for the functioning of telecom operations. Equipped with advanced technologies and infrastructure, the data centre plays a significant role in ensuring seamless connectivity and efficient data handling for millions of users across the country.
- Gain firsthand knowledge of operational processes and technologies for large- scale data management.
- Understand the infrastructure supporting telecommunication services and its role in enhancing service delivery.
- Learn about security protocols to safeguard data integrity and privacy.

### 1.2.3 Learning Outcome

- **Network Security Awareness:** Insight into network security measures and protocols will raise awareness of the cybersecurity challenges in the telecommunications sector and the importance of safeguarding critical infrastructure.
- **Future Industry Trends:** Discussions about future trends, such as 5G technology, IoT, and the expansion of broadband networks, will provide students with a glimpse of where the telecommunications industry is heading.
- **Career Opportunities:** Students can gather information about potential career opportunities within the telecommunications sector and the skills and qualifications required to work in this field.
- **Corporate Social Responsibility (CSR):** Learning about BSNL's CSR initiatives will highlight the role of corporations in contributing to the betterment of society and communities.
- **Environmental Awareness:** Understanding BSNL's environmental practices and sustainability efforts will raise awareness about the environmental impact of telecommunications and the importance of responsible corporate practices.

#### 1.2.4 Photographs (Paste 4-5 good photogrpahs of hands on experience/visit)



#### 1.2.5 Feedback of the day – 2

The industrial visit to the BSNL Data Centre was an **eye-opening experience** that provided a crucial context for the theoretical knowledge gained in subjects like networking and cloud computing. After a hands-on day with microcontrollers, this visit beautifully illustrated the **massive scale of the infrastructure** required to host and manage the data that connected devices rely upon. Witnessing the **redundancy (N+1 architecture)** in power and cooling systems drove home the absolute necessity of high availability in the digital backbone of the nation. The tour provided a valuable real-world understanding of **Tier-III operational standards** and the significant role of the telecommunications industry in enabling technologies like IoT and digital services. It was highly insightful to see the convergence of electrical, mechanical, and IT engineering disciplines in a single, critical facility.

## **Day 3 report**

### **1.3.1 Industry Name – Entrepreneurship Lecture by Mr. Milind Datar, Co-Founder & Managing Director, CaneBot (Canectar Foods Pvt Ltd)**

#### **1.3.2 Objectives**

- To gain a practical and philosophical understanding of the entrepreneurial journey from an industry veteran.
- To analyse the business model and strategic pivots of an innovative deep-tech startup (CaneBot) operating in the agro-based food robotics sector.
- To learn about the non-technical skills, such as resilience, humility, and strategic redirection, critical for managing business growth and failure.

#### **1.3.3 Learning outcome**

- **Resilience and Mindset:** The session was a powerful lesson in entrepreneurial endurance, highlighting the speaker's personal philosophy that great success often follows significant setbacks. Witnessing his journey, which included public downfalls like the **Shark Tank India** experience, provided a realistic perspective on risk and humility in business.
- **Strategic Pivoting:** Learned the crucial concept of "**going back to the drawing board to start from scratch.**" This was exemplified by CaneBot's decision to drop their packaged product line and focus entirely on their core, patented product: the **robotic sugarcane juice vending machine**—a strategic pivot driven by honest market and investor feedback.
- **Technology in Unorganized Sectors:** Understood how **IoT and Food Robotics** can revolutionize traditional, unorganized markets. The CaneBot model demonstrated the commercial viability of using technology (automated, hygienic, 24/7 self-operated kiosks) to build a credible brand around a traditional Indian beverage.

#### 1.3.4 Photographs (Paste 4-5 good photographs of hands on experience/visit)



#### 1.3.5 Feedback of the day – 3

The lecture by Mr. Milind Datar was, quite simply, **transformative and inspiring**. It transcended the typical "gyaan" session, offering a raw, unfiltered look at the life of a true entrepreneur. What resonated most deeply was his **humility and grounded nature**, especially when discussing his financial and business lows. Seeing his vulnerability, particularly in the context of his setbacks like the Shark Tank experience, was incredibly impactful and immediately built a foundation of respect. His core philosophy of embracing failure as a restart—the idea of "**going back to the drawing board**"—is a lesson in **strategic resilience** that is more valuable than any textbook theory. The interactive style of the session, coupled with him sharing his genuine "life map," made him an exceptional mentor. It was a perfect blend of personal inspiration, real-world business analysis, and a reminder that dedication and a bit of **luck** are all part of the journey.

## **Day 4 report**

### **1.4.1 Industry Name – City Tour**

1. Shaniwar Wada
2. Raja Dinkar Kelkar Museum

### **1.4.2 Objectives**

#### **Shaniwar Wada:**

- **Overview:** Shaniwar Wada is a historic fortification built in 1732, serving as the seat of the Peshwas of the Maratha Empire. It is famous for its architectural grandeur, massive walls, and rich historical significance.
- **Key Observations:**  
The fort's imposing gates and intricate design reflect the Maratha architectural style and engineering excellence.
- **Challenges** noticed include inadequate waste management, lack of a physical ticket counter (reliance on QR code booking), and accessibility issues for elderly and differently-abled visitors.
- Preservation of the structure needs enhancement to prevent erosion and damage to heritage sections.
- **Learning:** Visitors gain a direct experience of Maratha history, culture, and historic urban design, supporting heritage conservation awareness.

#### **Raja Dinkar Kelkar Museum:**

**Overview:** This museum houses a vast collection of artifacts that reflect Indian art, craft, and culture from various regions and periods.

#### **Key Observations:**

- The museum exhibits everyday items, ornate crafts, musical instruments, and traditional artifacts, offering rich cultural insights.
- The museum environment is well-maintained, but visitor information and signage could be augmented to enhance understanding.
- The museum plays a vital role in preserving and showcasing India's cultural legacy.

**Learning:** The visit enhanced appreciation for India's artistic heritage and highlighted the importance of cultural preservation.

### **Transportation and Commute:**

- Used local transport and cabs for travel between accommodation and sites.
- Challenges included irregular local transport schedules and difficulty in last-mile connectivity.
- Cab rides provided comfort but were costlier, especially during peak hours.

### **Challenges Faced:**

- Shaniwar Wada's ticket booking system excludes visitors unfamiliar with digital technology.
- Waste disposal and cleanliness at heritage sites could be improved.
- Accessibility improvements are needed for differently-abled and elderly visitors.
- Visitor guidance systems at both sites can be enhanced for better educational impact.

### **Proposed Solutions:**

- Implement inclusive ticketing with both online and physical counters.
- Deploy IoT-enabled smart waste management bins to maintain cleanliness.
- Enhance accessibility with better pathways and signage.
- Use augmented reality (AR) for interactive historical and cultural storytelling at key spots.

**Orientation and Independence:** The tour helped us to become more self-reliant and confident in navigating unfamiliar environments.

**Memorable Experiences:** Creating lasting memories and fostering a sense of adventure and exploration.

**Career Insights:** Students may discover potential career paths in fields such as tourism, hospitality, cultural preservation, or urban planning.

**Critical Thinking:** Students may be encouraged to think critically about historical events, urban development, and cultural preservation.

**Community Engagement:** Students will engage with local residents, artisans, and businesses, fostering a sense of community connection and cultural exchange.

### **1.4.3 Learning outcome**

- **Orientation and Independence:** The tour helped us to become more self-reliant and confident in navigating unfamiliar environments.
- **Memorable Experiences:** Creating lasting memories and fostering a sense of adventure and exploration.
- **Career Insights:** Students may discover potential career paths in fields such as tourism, hospitality, cultural preservation, or urban planning.
- **Critical Thinking:** Students may be encouraged to think critically about historical events, urban development, and cultural preservation.

#### 1.4.4 Photographs (Paste 4-5 good photographs of hands on experience/visit)



#### 1.4.5 Feedback of the day – 4

I would like to express my sincere gratitude for organizing the tour of Shaniwar Wada and Raja Dinkar Kelkar Museum in Pune. The tour was filled with many remarkable highlights that provided a deep insight into Pune's rich history and cultural heritage. Shaniwar Wada's

historical importance and stunning architectural grandeur left a lasting impression. Learning about the Maratha Empire and the significance of this iconic fort was truly enlightening.

The Raja Dinkar Kelkar Museum showcased a vast and diverse collection of artifacts, beautifully reflecting India's artistic heritage and craftsmanship. Additionally, experiencing the local transportation system, including buses and cabs, enriched my understanding of Pune's urban mobility. Exploring the local street food was a delightful aspect of the tour, introducing me to the diverse flavors and culinary traditions of the region.

I highly recommend this tour to anyone interested in Pune's history and culture. It provides an excellent opportunity to explore the city's heritage and develop a deeper appreciation for its historic landmarks.

Once again, thanks to all the faculty, authorities, and industry professionals for making this wonderful experience possible.

## **Day – 5 report**

### **1.5.1 Event/Industry Name – Hands-on Workshop (Cont.): IoT & Embedded Systems**

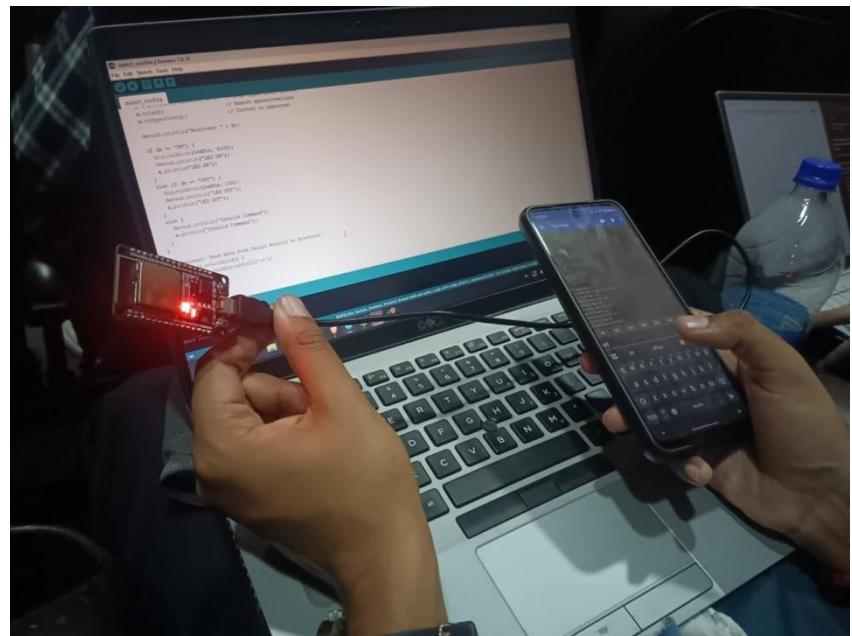
#### **1.5.2 Objectives**

- To explore the architecture and **real-world applications of embedded systems** and their role in modern technology.
- To develop practical skills in interfacing and programming **digital and analog sensors** with microcontroller hardware.
- To understand how to leverage **IoT and Embedded Systems** knowledge for **Computer Science (CS) stream projects**.

#### **1.5.3 Learning outcome**

- The session began with an elaborate theoretical discussion on **embedded systems**, detailing their components, operating principles, and real-life use in devices from medical equipment to industrial automation.
- The core of the day was a unique hardware session where we successfully created working circuits and coded the logic for three different types of sensors: a **Temperature Sensor**, a **Humidity Sensor**, and a **Distance/Touch Sensor**.
- This hands-on integration of code and hardware provided a profound understanding of how software manages and interprets physical data.

#### 1.5.4 Photographs (Paste 4-5 good photographs of hands on experience/visit)



#### 1.5.5 Feedback of the day – 5

Day 5 was the most practical and unique part of the workshop. The exercise of building and coding three different sensors—a challenging yet rewarding experience—solidified the connection between our **Computer Science** curriculum and the physical world. The concluding Q&A session, which provided **CS-specific project examples** to apply this knowledge, was highly beneficial and motivated us to look for opportunities to integrate **IoT and embedded systems** into our future development work.

## Conclusions

This report outlines my transformative two-week experiential learning journey in Hyderabad and Pune, where I engaged with cutting-edge technology and its real-world applications. The program provided hands-on experiences in robotics, artificial intelligence, and entrepreneurship, allowing me to interact with industry professionals and explore how technology shapes our society. By immersing myself in innovative environments and historical contexts, I gained valuable insights into ethical considerations and the importance of interdisciplinary approaches in driving progress. This experience has significantly enhanced my understanding and preparedness for future challenges in a rapidly evolving technological landscape.

**Interdisciplinary Integration:** The experiential learning journey highlighted the importance of integrating knowledge across various fields, such as technology, history, and entrepreneurship. Understanding how these areas intersect can lead to innovative solutions and a more holistic approach to problem-solving.

**Practical Application of Knowledge:** Engaging in hands-on projects, such as building robots and working with Large Language Models (LLMs), demonstrated the value of applying theoretical concepts in real-world scenarios. This practical experience not only reinforced my understanding but also equipped me with skills that are crucial in today's technology-driven landscape.

**The Role of Technology in Society:** Visits to innovation hubs and tech centers revealed how technology is transforming industries and addressing societal challenges. From sustainable agricultural solutions to efficient public transportation systems, the potential of technology to drive positive change is immense. This has motivated me to explore how I can contribute to such advancements.

**Ethical Considerations in Technology:** Discussions around the ethical implications of AI and technology underscored the necessity for responsible innovation. As future professionals, it is essential to remain aware of issues such as bias, data privacy, and the societal impact of our work, ensuring that technology serves the greater good.

**Entrepreneurship and Resilience:** Learning from the entrepreneurial journey of CaneBOT reinforced the importance of resilience and adaptability in the face of challenges. The insights gained about market needs, customer feedback, and iterative development will guide me in my future endeavors, whether in startups or established organizations.

**Continuous Learning and Growth:** This program emphasized the need for lifelong learning in an ever-evolving technological landscape. The experiences gained have inspired me to remain curious, seek out new knowledge, and embrace opportunities that contribute to my personal and professional growth.

## **1. Coordination and Utility-Shifting Challenges in Urban Infrastructure Projects (BSNL & L&T Metro Interface)**

**Problem Statement:** There is a persistent lack of efficient cross-departmental coordination and inter-agency utility shifting (e.g., BSNL's underground optical fiber cables/copper lines) during major public works like the L&T Metro Rail Hyderabad expansion, leading to frequent service disruptions, significant project delays, and increased costs for both the public-sector service provider (BSNL) and the infrastructure concessionaire (L&T Metro).

## **2. Sustaining Financial Viability and Mitigating Revenue Risk in Large-Scale PPP Projects (L&T Metro Hyderabad)**

**Problem Statement:** The L&T Metro Rail Hyderabad Phase I, being a large-scale PublicPrivate Partnership (PPP), is struggling with severe financial viability challenges characterized by mounting losses and high debt burden, primarily due to the failure to achieve targeted ridership levels (exacerbated by events like the COVID-19 pandemic) and the under-monetization of nonfare revenue sources like real estate development.

The industrial visits to Pune and Hyderabad truly were the ideal combination of technical application, exposure and culture. Hyderabad is a city that boasts extensive companies and research and development centers within the tech world. We had the opportunity to visit companies like BSNL, L&T Metro, T-HUB and T-Works which provided us with keen insight into valuable engineering, invention, and automation.

Such operations in advanced fields across various companies cultivated a better appreciation of how today's modern economy is found with the right technology and tech-related support. Simultaneously, Pune is known for its advanced automobile and manufacturing sectors. We toured microcontroller plants and other companies which gave us up close and personal views of programming, automation, assembly lines and final quality inspections.

Thus, the interdisciplinary engineering championed for us brought us a renewed sense of technical competence and helped us apply concepts in those fields with greater appreciation. But even better than the opportunity itself was the cultural history involved with Pune and Hyderabad. Going to a new city with such regional history helped us better connect with the cities themselves as regional cuisine and engagement with industry professionals helped connect us on a more personal level beyond work.

Therefore, much that I learned and took away was inspired by our findings to transform into positive changes in our fields and combined culture only helps in shaping innovation.

