Maharaja Surajmal Institute of Technology,

Department of Computer Science and Engineering

Industrial Visit Report

Industry Name and Address	Ducat, Vikaspuri
Name of the Expert	Mr. Abdul, Data Science & AI Trainer at DUCAT
Date and Time	16-09-2025, 10:00 AM - 2:00 PM
Target Audience	CSE Department, 3rd Semester
Co-ordinated by	Ms. Kirti Dahiya, Mr. Deepak
Total Participants	50

Introduction

As part of the academic curriculum of the Computer Science & Engineering Department, Maharaja Surajmal Institute of Technology, a formal industrial visit was organised on **16th September 2025** to **DUCAT, Vikaspuri, New Delhi**, a reputed training institute known for its specialisation in emerging technologies such as Artificial Intelligence, Machine Learning, Cloud Computing, and IoT.

The primary objective of the visit was to provide hands-on exposure and industrial perspective to the students of the **3rd Semester, CSE Department**, in the domain of **Artificial Intelligence, Computer Vision, and Deep Learning**. This visit was organised under the academic guidance of **Ms. Kirti Dahiya** and **Mr. Deepak**, Assistant Professors, and was attended by **50 students** of the department **CSE (**I st Shift and II nd Shift**).**

The visit aimed to bridge the gap between classroom learning and industrial practices, thereby enhancing the students' understanding of real-world technological applications.

Session Overview

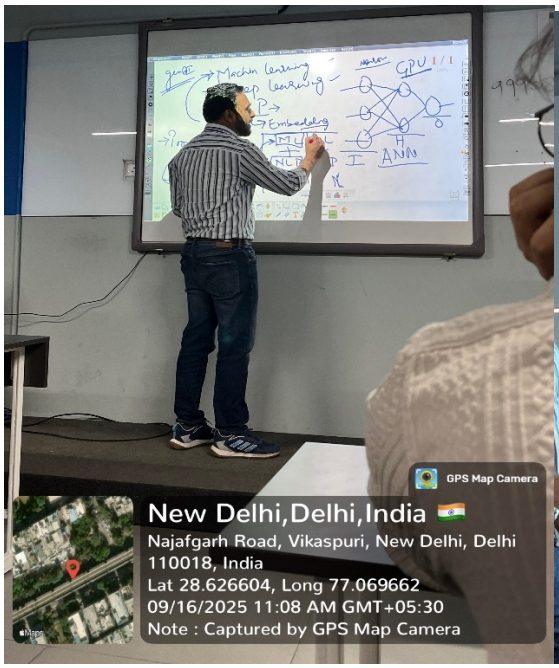
The session commenced with a warm welcome by the **DUCAT team**, followed by an in-depth **presentation and technical session** conducted by **Mr. Abdul**, Senior Trainer in Data Science and Artificial Intelligence.

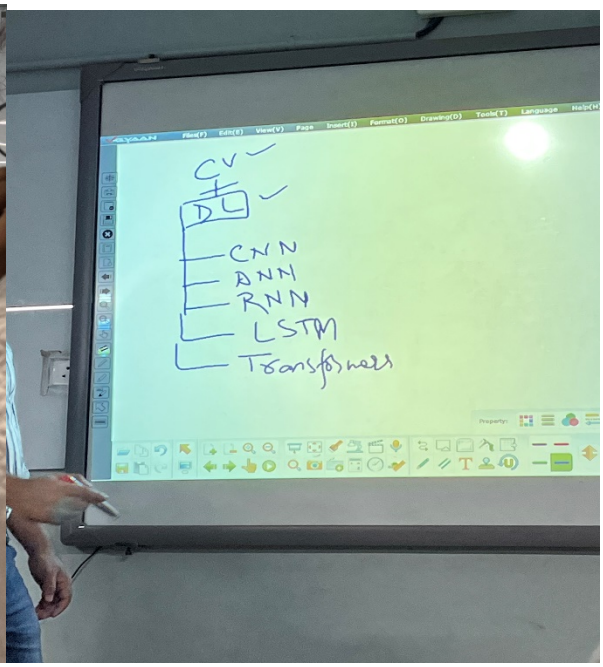
He began by introducing the students to the **rapidly evolving landscape of Artificial Intelligence (AI) and Machine Learning (ML)**, particularly focusing on how **Generative AI** and **Large Language Models (LLMs)** are revolutionising industries in the modern digital era. Students were provided with an academic-to-industrial transition perspective**,** showcasing how concepts studied in classrooms are implemented in practical projects and solutions.

The trainer explained how **LLMs process user input through hidden layers** of neural networks to generate contextual responses in real time, stressing the **importance of computational efficiency, time complexity, and optimization** in AI systems.

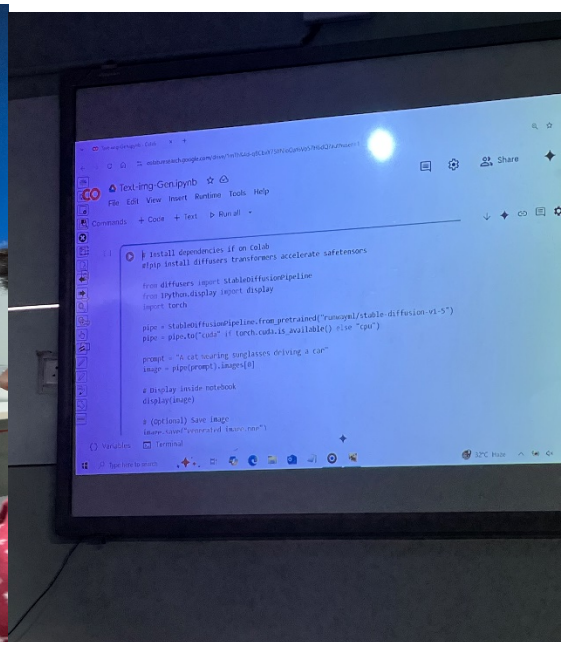
Trainer Highlighted the Following Key Areas

- **Computer Vision (CV) and IoT Integration**: Students were introduced to the concept of using Computer Vision for object detection and enabling **hand gestures as inputs** to electronic devices through **Serial Communication and IoT**. This demonstrated how human interaction can be made seamless with AI-powered hardware.
- **AI and Deep Learning Architectures**: A detailed explanation was provided on how Computer Vision, when combined with **Deep Learning (DL)**, results in advanced models such as Convolutional Neural Networks (CNNs), Deep Neural Networks (DNNs), Recurrent Neural Networks (RNNs), Long Short-Term Memory (LSTMs), and Transformers. Each architecture was explained with its real-world relevance and application areas.





- **Agentic AI and Retrieval-Augmented Generation (RAG)**: Mr. Abdul highlighted how **Agentic AI systems** and **RAG-based architectures** are witnessing rapid adoption in industry. He explained their practical feasibility and the growing potential they hold for enterprise-level deployments, research, and innovation**.**
- **Imagination to Innovation**: Students were encouraged to **brainstorm innovative use cases** of Computer Vision in real life. The trainer emphasised the importance of using **Python, pipelines, and pre-trained AI/LLM models** to transform **conceptual ideas into practical, real-world projects**.



Live Coding Demonstration

One of the most **impactful segments of the visit** was the **live coding demonstration** conducted by Mr. Abdul.

- He showcased the development of a **Face Recognition system using Python and Computer Vision libraries**, simulating its use as an **Intruder Alert or Anti-Theft Device**. The demonstration illustrated how advanced AI algorithms could be implemented in simple yet powerful real-world applications.
- Additionally, students were introduced to a **specialised AI Trainer Device equipped with a touchscreen**, capable of interacting with **electronic circuits and hardware devices**. This demonstration effectively bridged the concepts of **Computer Vision, AI, and IoT integration**, offering students a glimpse of **industry-grade applied AI solutions**.

The live demonstrations not only enhanced students' technical curiosity but also motivated them to apply their classroom learning into **innovative real-world projects**.

Interactive Q&A Session

The session concluded with an **interactive Q&A segment**, where students actively engaged with the trainer and sought clarification on advanced technical topics. Key highlights included:

- **How machine computation impacts time complexity** in AI/ML applications.
- **How Large Language Models (LLMs) function in real time**, including their architecture, efficiency, and deployment.
- **Best practices for developing AI-driven projects**, from data preprocessing to pipeline implementation.

The trainer provided **invaluable insights**, addressing queries with practical examples and guiding students on **career-oriented learning paths**. Students were also encouraged to **brainstorm innovative Computer Vision applications**, focusing on **real-world challenges and AI-powered solutions**.

This session not only clarified theoretical doubts but also inspired students to think critically and innovatively.

Outcomes of the Visit

The industrial visit proved to be **immensely beneficial** in multiple ways:

1. **Academic Enrichment**: Students gained exposure to **cutting-edge AI and Computer Vision technologies**, beyond the academic curriculum.
2. **Industry Awareness**: They understood the **practical implementation of AI and ML concepts** in real-world problem solving.
3. **Hands-On Exposure**: The **live coding demonstrations** enhanced technical skills and gave students practical insights into applied AI development.
4. **Idea Stimulation**: Students were motivated to **brainstorm new AI-based solutions**, encouraging creativity and innovation.
5. **Career Guidance**: Insights into **Agentic AI, RAG, and emerging trends** offered students clarity on future career opportunities in AI, ML, and IoT domains**.**

Conclusion

The **Industrial Visit to DUCAT, Vikaspuri**, was an **insightful and transformative experience** for the students of the **CSE Department, 3rd Semester**. The combination of expert-led presentations, live demonstrations, and interactive discussions successfully bridged the gap between academic knowledge and industry practices.

The visit has left the students with a renewed sense of motivation to explore advanced topics in Artificial Intelligence, Deep Learning, Computer Vision, and IoT, and to channel their learning into **meaningful real-world innovations**.

Acknowledgment

We extend our sincere gratitude to the **management and team of DUCAT, Vikaspuri**, for their warm hospitality and invaluable technical guidance.

We also thank our respected **Head of Department of both shifts, Dr. Geetika Dhand** and **Dr. Nishtha Jatana** for there constant support and encouragement in facilitating such academic-industry collaborations.

Faculty Co-ordinator :

Dr. Kavita

Dr. Sapna Malik

Dr. Medhavi Malik

Dr. Geetika Dhand
HOD CSE (I st Shift)

Dr. Nishtha Jatana
HOD CSE (II nd Shift)