

Maharaja Surajmal Institute of Technology

Department of Computer Science and Engineering

Report on Seminar on Generative AI

Name of the Expert	Mr. Rishabh Gupta,DUCAT
Date and Time	12-11-2025, 11:00 AM - 12:00 PM
Target Audience	CSE-2nd Year Students
Organized by	CSE Department
Total Participants	168

Introduction

On **12th November 2025**, a workshop was held at **Maharaja Surajmal Institute of Technology (MSIT), Janakpuri**, for **CSE 2nd year** students. The expert was **Mr. Rishabh Gupta** from **DUCAT**. The seminar aims to introduce students to the rapidly evolving field of Generative AI, highlighting the most in-demand industry skills and providing a comprehensive road map for understanding its principles and future prospects.

Objective of the Session

The main objectives of the seminar were:

- To orient students towards the rapidly evolving field of **Generative AI** and its growing impact on various industries.
- To highlight the current market demand for AI-related skills and guide students on how these skills can enhance their **placement and interview performance**.
- To introduce students to the fundamentals of **Generative AI**, along with concepts like **Data Analytics (DA)** and **Exploratory Data Analysis (EDA)**, and provide a clear learning roadmap.
- To motivate students to develop **practical skills**, stay updated with **emerging technologies**, and prepare effectively for future career opportunities.

The seminar covered essential aspects of Generative AI, focusing on its fundamental concepts, real-world applications, and relevance in today's technological landscape. Mr. Rishabh Gupta explained key topics such as **Data Analytics (DA)** and **Exploratory Data Analysis (EDA)**, which form the base for understanding AI systems. The session provided students with a structured roadmap to begin their journey in Generative AI, encouraging them to explore emerging tools and stay updated with ongoing advancements in the field.



Session Highlights

During the seminar, Mr. Rishabh Gupta provided valuable insights into **Generative AI**, **Data Analytics**, and the essential skills required to align with current industry trends.

Programming Foundations and Interview Readiness

The session began with a focus on the **importance of programming fundamentals**, particularly **C and C++**. The expert emphasized that in most technical interviews, the **first question often revolves around these languages**, making it crucial for students to develop strong coding and logical thinking skills from the early years of engineering .

Exploring Data Analytics (DA) and Exploratory Data Analysis (EDA)

The speaker highlighted the growing importance of **Data Analytics (DA)** and **Exploratory Data Analysis (EDA)** in AI-driven companies. He explained that knowledge of DA is frequently tested in interviews and serves as a foundation for advanced AI concepts.

To help students understand the workflow of EDA, he outlined the following steps:

- **Data Collection:** Gathering data from surveys or online platforms like **Kaggle**. The expert used the **COVID-19 pandemic** as an example, explaining how data was collected and analyzed to track active cases and fatalities.
- **Data Cleaning:** Introducing the **Python library Pandas**, he explained how it is used to clean and organize raw data.
- **Univariate Analysis**
- **Bivariate Analysis**

- **Multivariate Analysis**

These concepts were demonstrated through the **Titanic dataset**, helping students visualize how analytical methods uncover meaningful insights.

Technical and Non-Technical Approaches for Data Analytics

The expert described two key approaches to Data Analytics:

- **Technical Approach:**

Involves mastering Python libraries such as **Pandas**, **NumPy**, **Matplotlib**, and **Seaborn**.

- *Pandas* – used for data cleaning and handling large datasets.
- *NumPy* – used for performing numerical operations.
- *Matplotlib* and *Seaborn* – used for visualizing and interpreting data.

- **Non-Technical Approach:**

Focuses on tools like **Excel**, **Power BI**, and **Tableau** for data representation and automation. The speaker also discussed the importance of **VBA/Macros**, which are in high demand for automating repetitive tasks.

In addition, he emphasized that **SQL** continues to be one of the most in-demand skills for managing and analyzing structured data.

Visualization Techniques

The speaker provided practical guidance on selecting the right type of graph for data visualization:

- **Bar and Pie Charts** – when unique values are few.
- **Histograms and Scatter Plots** – when unique values are numerous.
- **Line Graphs** – for tracking data trends over time.

These techniques, he noted, help make data interpretation more intuitive and impactful.

Introduction to Machine Learning and Data Science

Moving forward, the expert introduced **Machine Learning (ML)**, emphasizing that **no field today is untouched by ML applications**. He shared relatable examples, including **weather forecasting**, **Ola price estimation**, **Netflix recommendations**, and **blister inspection systems** used in manufacturing.

He also explained the key components of **Data Science**, which include **data cleaning**, **mathematical understanding**, and **training machine learning models** to make accurate predictions.

Artificial Intelligence (AI) and Generative AI

The session also clarified the **difference between traditional AI and Generative AI (Gen AI)**. While AI focuses on problem-solving and prediction, Generative AI centers on **creation (generating new data, text, or images)** using trained models. This segment helped students understand how Gen AI is shaping the future of industries and innovation.

Project Guidance and Learning Roadmap

Towards the end, the expert shared a recommended **learning roadmap**, encouraging students to complete **Pandas, NumPy, Matplotlib, Seaborn, Power BI, and SQL** before their final year. He also advised them to work on practical projects to strengthen their resumes, suggesting an **OCR (Optical Character Recognition)** project as an excellent starting point that showcases both technical proficiency and creativity.



Student Interaction and Q&A Session

The seminar was highly interactive, with students showing keen interest in the topics discussed. They actively participated by asking questions related to:

- **Concerns about AI replacing human jobs:** Some students expressed worry about the increasing capabilities of AI and whether their work could be fully automated in the near future. Mr. Rishabh Gupta reassured them that **there are many tasks AI cannot perform without human involvement**, and humans will continue to play a critical role in workplaces for at least the next five years.
- **Guidance on skill development:** Students inquired about the most important skills to focus on to stay relevant in an AI-driven industry.

Mr. Rishabh Gupta addressed their queries patiently, providing thoughtful insights and encouraging students to **take a proactive approach** by exploring practical projects, leveraging online resources, and consulting faculty mentors for personalized guidance.



Conclusion

The seminar served as a comprehensive guide for students keen on exploring the field of Generative AI, emphasizing the importance of building strong fundamentals in programming, data analytics, and machine learning. Students left the session informed about the practical applications of AI, the skills in demand, and the steps to approach projects and learning systematically. The session motivated them to balance technical learning with practical experience, reinforcing that consistent effort and curiosity today will open doors to meaningful opportunities in the rapidly evolving tech landscape. We extend our sincere gratitude to Mr. Rishabh Gupta for taking the time to share his knowledge, guidance, and practical insights on Generative AI, Data Analytics, and Machine Learning with the students. We also thank faculty coordinators and HOD CSE department for arranging this informative seminar and providing students with an opportunity to enhance their skills, clarify their queries, and plan their learning journey effectively.

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