

Malnad College of Engineering

(An autonomous institute under VTU)

Department of CSE (AI&ML)

Report on Workshop on

Prompt Engineering : Practical Applications and Real-World Use Cases



Title: Prompt Engineering: Practical Applications and Real-World Use Cases

Date: 9th September, 2025

Speaker: Dr. Aravinda C V

About the speaker: Dr. Aravinda C V is a postdoctoral researcher and senior professor with over 20 years of interdisciplinary experience in Artificial Intelligence, Quantum Machine Learning, and Deep Learning. He has authored three AI-focused textbooks, published 24+ research papers (including several in reputed Q1 journals), and mentored more than 30 postgraduate researchers. He has led international R&D collaborations in Japan and Malaysia and contributed to AI-integrated solutions in healthcare, EV optimization, and generative AI. Dr. Aravinda is also recognized for his expertise in teaching Prompt Engineering and LLMs at both UG and PG levels.

Summary of the Talk:

Dr. Aravinda C V began the workshop with an introduction to Prompt Engineering, highlighting its importance in improving the efficiency and accuracy of responses from Large Language Models (LLMs). He explained the internal mechanisms of LLMs, covering key concepts such as tokens, embeddings, and attributes, which gave participants a clear understanding of how these models process inputs. A brief overview of the history of LLMs traced their journey from simple rule-based systems to today's advanced generative AI models. The session also included practical demonstrations, where prompts were tested on different LLMs and their generation quality was assessed. An important highlight was the PII Data Quality & Masking Project, which showcased how sensitive information like Aadhaar and mobile numbers can be masked securely while retaining data usability. The workshop concluded with insights into cloud deployment, where Dr. Aravinda explained how AI applications can be deployed for real-world scalability and accessibility.



Key Points Covered:

1. Introduction to Prompt Engineering and its significance.

Prompt engineering is the art of designing effective inputs for AI models. It ensures accurate, context-aware, and reliable outputs in real-world applications.

2. Mechanisms of LLMs: tokens, embeddings, and attributes.

LLMs break text into tokens, convert them into embeddings (numerical vectors), and use attributes like context and temperature to generate meaningful responses.

3. Evolution and history of LLMs.

LLMs have evolved from simple rule-based systems and early NLP models to advanced transformers like GPT, LLaMA, and other generative AI systems.

4. Practical demonstrations of prompts on different LLMs.

Participants observed how the same prompt behaves differently across models, showcasing their strengths, limitations, and adaptability.

5. Assessing generation quality across models.

The quality of outputs was compared based on accuracy, coherence, creativity, and reliability of responses.

6. PII Data Quality & Masking (Aadhaar + Mobile) project.

A practical project showed how to mask Aadhaar and mobile numbers, ensuring privacy while maintaining usable datasets.

7. Deployment strategies for LLM solutions on the cloud.

Dr. Aravinda explained how to deploy AI solutions on cloud platforms, enabling scalability, security, and accessibility for real-world use.

Conclusion:

The workshop provided participants with both theoretical insights and practical exposure to Prompt Engineering and LLM applications. Dr. Aravinda's methodical approach helped students understand not only how prompts can be optimized but also how such AI-driven systems can be securely implemented and deployed in real-world scenarios. The Department of CSE (AI & ML) extends sincere gratitude to Dr. Aravinda C V for his valuable session and to the organizing faculty and volunteers for their support in making the workshop a success.



