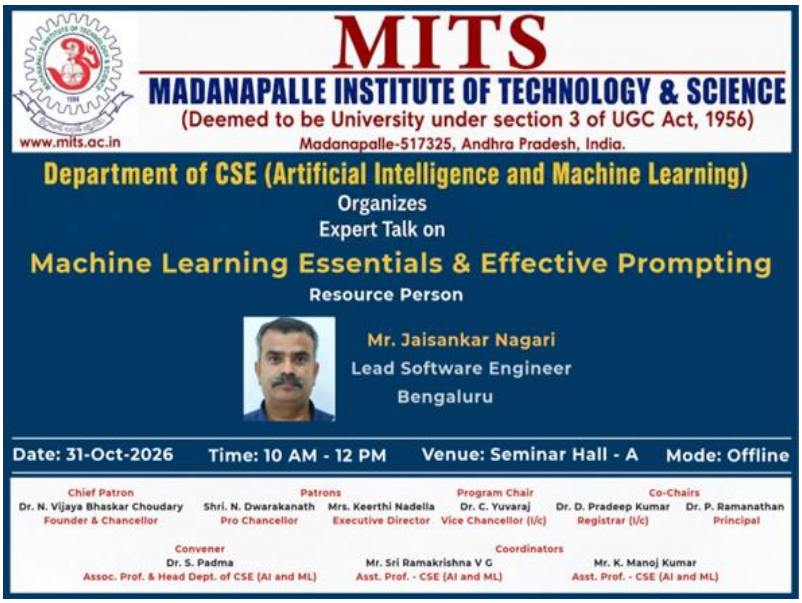
A Report on Expert Talk on "Machine Learning Essentials & Effective Prompting" Organized by Department of CSE (AI and ML) on 31.10.2026



Report Submitted by: Mr. Sri Ramakrishna V G, Assistant Professor, Department of CSE (AI and ML); Mr. K. Manoj Kumar, Assistant Professor, Department of CSE (AI and ML)
Resource Person Details: Mr. Jaisankar Nagari, Bengaluru
Participants: III-and IV-Year CSE (AI and ML) – 120 Students
Venue: Seminar Hall - A
Mode of Conduct: Offline
Report Received on 04.11.2026

Department of CSE (Artificial Intelligence and Machine Learning) organized an Expert Talk on **"Machine Learning Essentials & Effective Prompting"** on 31.10.2026 (Saturday).

Welcome Address:
The event commenced at 10:00 AM with a warm and engaging welcome address to all by Mr. K. Manoj Kumar, Asst. Professor, Department of CSE (AI and ML), Madanapalle Institute of Technology & Science (MITS), Madanapalle. The events' primary goal of the expert talk was to understand the essentials of AI & ML, Effective Prompting techniques, and the skills expected by leading IT organizations especially related to AI. Encouraged everyone to actively participate, interact with the resource person, and make the best use of this learning opportunity.
Keynote Address
Dr. S. Padma, Associate Professor & Head, Department of CSE (Artificial Intelligence and Machine Learning), Madanapalle Institute of Technology & Science (MITS), Madanapalle, welcomed the students with her keynote address. In her speech, she emphasized the significance of such initiatives in preparing students for successful careers and appreciated their enthusiastic participation. She encouraged students to embrace innovation by mastering emerging technologies aligned with current industry requirements. She also stressed the importance of continuous learning, upskilling, and adaptability as essential qualities for achieving long-term professional growth and success.

Resource Person Lecture:
Mr. Jaisankar Nagari, Vice President, JPMorgan Chase, Bengaluru shared his insights related to expert talk on Machine Learning Essentials & Effective Prompting for III-and IV-Year CSE (AI and ML) students.
He discussed the following points in the event
He focused on the fundamentals and practical applications of machine learning and prompt engineering, highlighting how foundational concepts and effective interaction with AI models enhance modern software solutions and intelligent workflows. The expert began by introducing core Machine Learning principles, providing students with a strong conceptual understanding of how data, algorithms, and predictive models interact to solve real-world problems.



He then presented the core concepts of prompt engineering and explained how modern AI interaction operates through key techniques and domains, including:

- Artificial Intelligence
- Machine Learning & Deep Learning
- Prompt Engineering & Design Patterns
- Large Language Models (LLMs)
- Generative AI
- Context Windows & Tokenization
- Fine-tuning vs. Prompt Optimization

Students gained a comprehensive understanding of how to craft effective prompts, optimize AI interactions, and construct reliable inputs to get precise, high-quality responses from tools like ChatGPT.
The speaker explained the three major Machine Learning approaches:

- Supervised Learning
- Unsupervised Learning
- Reinforcement Learning

using practical examples such as spam email filtering, customer segmentation, recommendation systems, automated decision-making, and intelligent text generation.

Technical Highlights

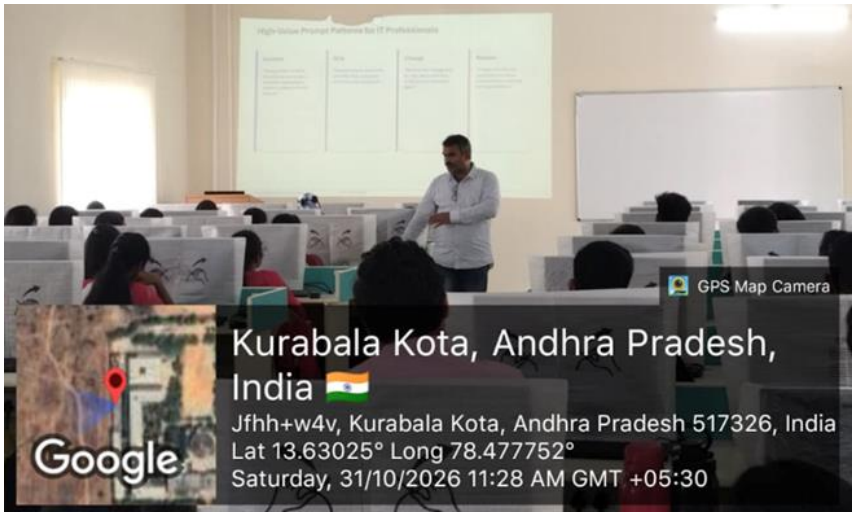
The resource person provided a comprehensive overview bridging machine learning essentials with effective prompting workflows, covering core foundations and practical implementation strategies.
The major technical topics discussed included:

- Fundamentals of Machine Learning & Core Algorithms
- Supervised, Unsupervised, and Reinforcement Learning Approaches
- Principles of Effective Prompt Engineering & Design Patterns
- Context Windows, Tokenization, and Model Behaviour
- Advanced Prompting Techniques (e.g., Chain-of-Thought, Few-Shot Prompting)
- Model Evaluation, Fine-Tuning, and Output Optimization
- Practical AI Integration and Experimentation Strategies
- Real-World Problem Solving Using Intelligent Systems

Students were introduced to industry-standard AI tools and technologies including:

- Python Programming
- Jupyter Notebook
- NumPy & Pandas
- Scikit-learn
- TensorFlow & PyTorch
- Large Language Models (LLMs) & Generative AI Interfaces
- Prompt Testing & Version Control (GitHub)
- Cloud-Based AI Development & Experimentation Platforms

The expert also explained the importance of structured interaction practices in modern AI development, demonstrating how combining robust machine learning essentials with precise prompt engineering enables practitioners to build, evaluate, and optimize intelligent applications efficiently.



Real-Time Industry Case Studies

To make the session more practical and engaging, the speaker discussed several real-world Machine Learning and Prompt Engineering applications currently used by leading technology companies.
These included:

- Generative AI & LLM Assistants (ChatGPT, Claude) – Optimizing prompt structures to generate accurate code, technical documentation, and complex problem-solving workflows.
- Netflix & Amazon Recommendation Systems – How predictive ML models analyse user preferences to provide personalized content and product suggestions.
- Gmail Spam Detection & Automated Filtering – Classification algorithms used for text filtering and email safety.
- Tesla Autopilot & Self-Driving Vehicles – Applying computer vision and reinforcement learning for autonomous navigation.
- Financial Fraud Detection & Anomaly Spotting – Leveraging supervised and unsupervised learning models to catch unauthorized transactions in real time.
- Healthcare AI & Medical Diagnostics – Utilizing pattern recognition and deep learning models for predictive health insights and medical image evaluation.
- Google Search & Smart Query Resolution – Natural language processing techniques and intelligent prompting mechanisms for accurate search results.

The participants were highly impressed by the practical implementation of machine learning techniques and prompt engineering strategies in solving real-world business challenges.

Career Guidance

A significant part of the session focused on career opportunities available in Artificial Intelligence, Machine Learning, and Prompt Engineering.
The speaker explained the growing demand for professionals in key roles such as:

- Machine Learning Engineer
- Prompt Engineer & AI Specialist
- AI Engineer / LLM Developer
- Data Scientist
- Deep Learning Engineer
- MLOps Engineer
- NLP & Generative AI Specialist
- AI Product Manager
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Students were advised to strengthen their programming and prompt engineering skills, participate in Kaggle competitions, build hands-on AI projects, contribute to open-source repositories on GitHub, obtain industry-recognized certifications, and continuously upgrade their technical knowledge.

The speaker also presented a structured roadmap for becoming an AI professional, beginning with Python programming and core mathematical essentials, progressing through Machine Learning algorithms, Deep Learning, Prompt Design, MLOps, Cloud Platforms, and end-to-end real-world project development.

Interactive Session

An interactive question-and-answer session was conducted towards the end of the program. Students enthusiastically interacted with the resource person, Mr. Jaisankar Nagari, by asking questions related to Machine Learning essentials, effective prompt engineering strategies, placement opportunities, required technical skills, higher education, certification courses, and industrial expectations.

The resource person provided detailed answers based on his extensive industry experience, motivating students to pursue continuous learning, hands-on project development, and practical innovation in the rapidly evolving fields of AI and ML.

Key Takeaways

The Expert Talk on "Machine Learning Essentials & Effective Prompting" by Mr. Jaisankar Nagari, organized by the Department of CSE (Artificial Intelligence and Machine Learning) at MITS, proved to be highly informative, inspiring, and industry-oriented. The session successfully connected theoretical concepts with practical industrial applications, enabling students to understand the skills required to become future-ready engineers.

1. Foundational Understanding: Students gained a comprehensive understanding of Machine Learning essentials, core algorithms, prompt engineering techniques, Large Language Models (LLMs), and Generative AI, along with their interrelationships.
2. Effective Prompting Strategies: Participants learned how modern AI systems process user inputs and how to craft structured, optimized prompts to generate precise, high-quality responses from AI models.
3. Core ML Paradigms: The session enhanced students' knowledge of Supervised, Unsupervised, and Reinforcement Learning through practical examples and real-world applications.
4. Practical Implementation Workflows: Students understood the fundamentals of model behaviour, context windows, tokenization, and output optimization strategies in modern intelligent systems.
5. Industry-Standard Tools: The expert introduced essential tools and frameworks such as Python, Jupyter Notebook, NumPy, Pandas, Scikit-learn, TensorFlow, PyTorch, and LLM development platforms, emphasizing their significance in modern software development.
6. Real-World Case Studies: Practical examples—including ChatGPT, recommendation systems, automated content processing, spam detection, and autonomous navigation—demonstrated how machine learning and prompt engineering are transforming industries.
7. Career Awareness: Students gained insights into emerging career paths, such as Machine Learning Engineer, Prompt Engineer & AI Specialist, AI Engineer/LLM Developer, and Data Scientist.
8. Hands-On Skills Development: The session highlighted the importance of hands-on learning, project-based development, GitHub contributions, Kaggle participation, and industry certifications for improving employability.
9. Optimized AI Interaction: Participants understood how combining robust machine learning fundamentals with precise prompt design enables engineers to build reliable, high-performance AI applications.
10. Future-Ready Mindset: The expert motivated students to adopt a future-ready mindset by embracing continuous innovation, staying updated with rapidly evolving technologies, and developing practical problem-solving skills to meet market demands.

Vote of thanks

The event formally concluded with a Vote of Thanks delivered by Mr. Sri Ramakrishna V G, Assistant Professor, Department of CSE (AI and ML), MITS. He expressed his sincere gratitude to the resource person for taking the time to share his expertise and valuable insights with the students. He also extended his thanks to the Management, the Principal, and the Head of the Department for their constant encouragement and support in successfully conducting the Expert Talk.

Outcomes:

At the end of the presentation, students were able to:

1. Gain a comprehensive understanding of Machine Learning essentials, core algorithms, prompt engineering strategies, Large Language Models (LLMs), and Generative AI concepts.
2. Acquire practical knowledge of real-world AI and prompt-driven applications used by leading global technology organizations.
3. Enhance their understanding of current industry trends, prompt design principles, and future technological developments in AI and machine learning.
4. Strengthen academia–industry interaction through expert engagement with Mr. Jaisankar Nagari.

UN-SDG Mapping:

SDG 4 – Quality Education
SDG 8 – Decent Work and Economic Growth
SDG 9 – Industry, Innovation, and Infrastructure
SDG 16 – Peace, Justice and Strong Institutions
SDG 17 – Partnerships for the Goals