



**Department of Artificial Intelligence & Machine Learning (AI&ML) in
Association with VisionNet Systems**

Report on Faculty Development Program on Generative AI

Title: Generative AI

Date: 23/07/2025 to 5/08/2025

Venue: Hybrid Mode (Online participation through Microsoft Teams from NVIDIA Lab / In-person at VisionNet System Campus)

1. Introduction

The Department of Artificial Intelligence & Machine Learning (AIML), New Horizon College of Engineering, organized a 10-day Faculty Development Program (FDP) in collaboration with Visionet Systems on Generative Artificial Intelligence (Gen AI). The program emphasized both theoretical foundations and hands-on sessions, enabling faculty to gain exposure to Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), multi-agent systems, alignment techniques, and AI governance. This initiative aimed at enhancing faculty expertise to align academic practices with industry innovations in AI. The session was conducted in hybrid mode from 23/07/2025 to 05/08/2025.

2. Objectives of the Program

- To strengthen the conceptual understanding of Generative AI, Transformers, and LLMs.
- To provide hands-on training with Gen AI tools, APIs, and open-source platforms.
- To explore real-world applications of Gen AI in education, research, and industry domains.
- To equip faculty with the skills to mentor students in research, innovation, and projects involving Generative AI.

- To promote awareness of ethical AI practices, alignment strategies, and governance.

3. Participants

The training witnessed enthusiastic participation from faculty members of the AIML Department, New Horizon College of Engineering. Participants actively engaged in all sessions, gaining both conceptual clarity and practical expertise.

List of Participants:

Sl.No	Names
1.	Dr.N V Uma Reddy
2.	Dr.Uma Maheswaran
3.	Dr.Sreejith S
4.	Dr.Sowmya H K
5.	Dr. Jimsha K Mathew
6.	Dr.RajaSree R S
7.	Prof. Sivasankari

4. Day-wise Program Summary

Days	Date	Summary
1	23/7/2025	The program commenced with an overview of Transformer architecture, covering attention mechanisms and encoder-decoder designs. Faculty explored how these concepts form the backbone of LLMs.
2	24/7/2025	Sessions focused on tokenization, embedding, and positional encodings. Faculty understood how input text is transformed into meaningful vector representations, forming the foundation for context-aware language models.
3	25/7/2025	The theme of the day was fine-tuning and Parameter Efficient Fine-Tuning (PEFT) techniques such as LoRA and QLoRA. Faculty also learned about prompt design and patterns for optimizing LLM outputs.
4	28/7/2025	The program introduced Vector Databases and retrieval techniques. Participants learned dense and hybrid search methods using modern vector DB approaches, highlighting their role in enhancing AI-driven applications.
5	29/7/2025	Faculty built a minimal Retrieval-Augmented Generation (RAG) loop, experimenting with chunking strategies and integrating structured data such as tables into AI systems.
6	30/7/2025	Sessions focused on multi-hop reasoning and graph-based retrieval using Neo4j. Faculty explored how knowledge graphs can be

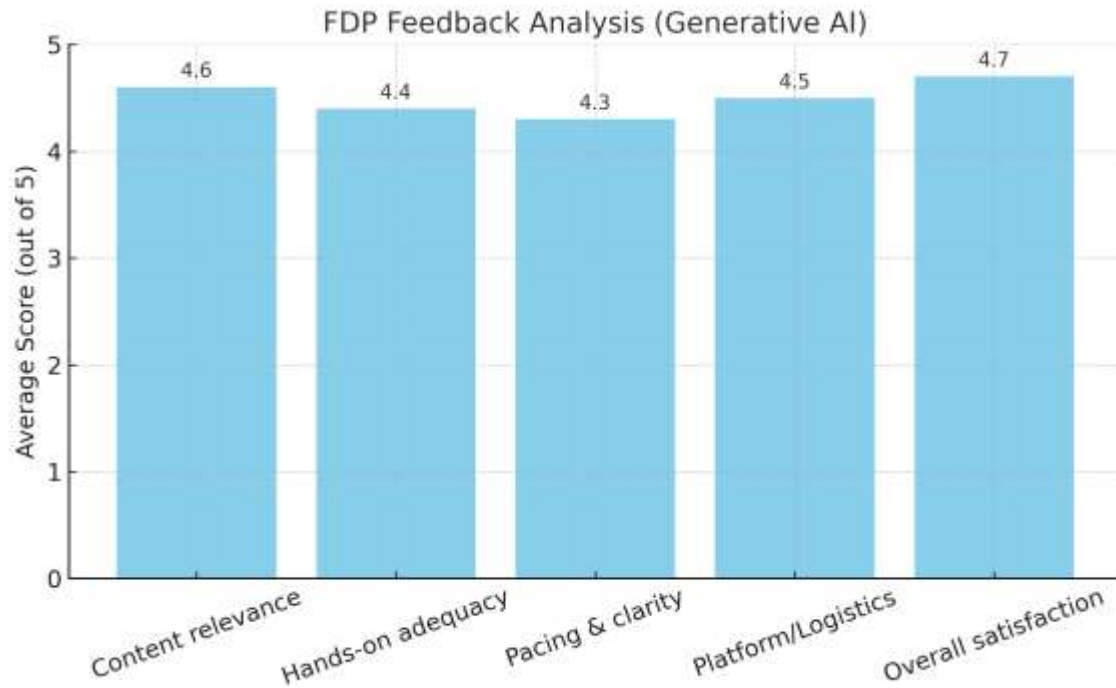
		combined with RAG pipelines to strengthen reasoning and inference in AI models.
7	31/7/2025	The day highlighted multi-agent orchestration, including Planner–Executor–Critic workflows. Participants gained exposure to CrewAI and Lang Graph frameworks, applying them to build simple multi-agent workflows.
8	1/8/2025	The focus shifted to alignment and hallucination mitigation. Faculty were introduced to RLHF (Reinforcement Learning with Human Feedback) and Constitutional AI approaches.
9	4/8/2025	Ethics and governance took center stage with sessions on bias, fairness, and AI policy oversight. Faculty engaged in discussions on risks and safeguards, drawing on real-world case studies.
10	5/8/2025	The program concluded with evaluation benchmarks and red-teaming exercises. Faculty explored datasets such as MMLU and Truthful QA for benchmarking Gen AI models. The day ended with wrap-up discussions, feedback collection, and a valedictory session with certificate distribution.

5. Key Outcomes & Takeaways

- Clear understanding of Generative AI fundamentals, transformers, and LLMs.
- Practical exposure to PEFT, RAG pipelines, vector DBs, and multi-agent orchestration.
- Awareness of alignment strategies, ethical AI practices, and governance.
- Faculty readiness to integrate Gen AI concepts into teaching, research, and student mentoring.
- Strengthened collaboration between academia and industry through Visionet Systems' expertise.

6. Feedback & Reflections

Faculty members expressed that the program was highly insightful, with a strong balance between theory and practical application. The hands-on sessions provided confidence to adopt Gen AI tools in their classrooms and research supervision. Participants also recommended continuing such training periodically to keep pace with fast-evolving AI technologies.



7. Conclusion

The 10-day Faculty Training Program on Generative AI, conducted by the AIML Department of New Horizon College of Engineering in association with Visionet Systems Pvt. Ltd., was a resounding success. The program effectively bridged the gap between academia and industry by equipping faculty with advanced knowledge and skills in Generative AI. It empowered faculty members to incorporate industry-relevant practices into their teaching, foster student innovation, and contribute to ethical and impactful AI adoption in academia.

Visit to VisionNet system,AMR Tech Park on 6/8/2025



HOD - AIML

Dr. N V Uma Reddy