



DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Organized

**FACULTY DEVELOPMENT PROGRAM ON TRANSFORMING
HEALTHCARE WITH LARGE LANGUAGE MODEL**

In association with

AP3 Sloutions

23/06/2025 – 27/06/2025

Overview of the Program

The **Department of Artificial Intelligence and Data Science** successfully organized a five-day Faculty Development Program (FDP) titled **“Transforming Healthcare with Large Language Models (LLMs)”** from **23rd June to 27th June 2025**. The FDP aimed to upskill faculty members in cutting-edge advancements in generative AI and its healthcare applications, with a particular focus on the emerging field of **Large Language Models (LLMs)** such as GPT, BERT, T5 and LLaMA.

The sessions were conducted at the **RPA Innovation Centre**, featuring expert resource persons from academia and industry. The FDP included a mix of theoretical sessions and hands-on practice to ensure participants could apply concepts in real-world research and teaching contexts.

The poster is a blue-themed graphic with white and yellow text. At the top, it reads 'Department of Artificial Intelligence and Data Science Organizes' in yellow, followed by 'FACULTY DEVELOPMENT PROGRAMME ON TRANSFORMING HEALTHCARE WITH LLM' in large white letters. Below this, it says 'in association with AP3 Solutions' with the AP3 logo. The dates 'June 23-27, 2025 [5 Days]' are in yellow. A section titled 'RESOURCE PERSONS' lists four individuals with their photos and titles: Dr. V. Ajantha Devi (Research Head, AP3 Solutions, Chennai), Dr. N. Ganesh (Senior Associate Professor, School of Computer Science and Engineering, VIT, Chennai), Ms. J. Abisha (GenAI Production Engineer, Altimetrik, Chennai), and Dr. D. M. Ajay (Senior Research Engineer, HCLTech, Chennai). A red starburst graphic on the right says 'Industrial Visit to TCS, Siruseri'. The venue 'Venue: RPA Innovation Centre' is at the bottom right. The bottom of the poster features the tagline '“Empowering Educators with LLM”' in white.

Department of Artificial Intelligence and Data Science
Organizes
**FACULTY DEVELOPMENT PROGRAMME ON
TRANSFORMING HEALTHCARE WITH LLM**
in association with
AP3 Solutions
June 23-27, 2025 [5 Days]
RESOURCE PERSONS

Dr. V. Ajantha Devi
Research Head
AP3 Solutions, Chennai

Dr. N. Ganesh
Senior Associate Professor
School of Computer Science
and Engineering
VIT, Chennai

Ms. J. Abisha
GenAI Production Engineer
Altimetrik, Chennai

Dr. D. M. Ajay
Senior Research Engineer
HCLTech, Chennai
**Industrial Visit
to
TCS, Siruseri**
Venue: RPA Innovation Centre
“Empowering Educators with LLM”

Day 1: Monday, 23rd June 2025

Inaugural Session (9:30 AM – 10:30 AM)

The FDP began with a warm welcome during the **Inaugural Function**, attended by faculty members, department heads and the invited guest speaker. The welcome address was delivered by the Head of the Department, who emphasized the importance of embracing LLMs in academic research and healthcare innovation. The resource person for Day 1, **Dr. V. Ajantha Devi**, was felicitated for her contributions to AI and RPA innovation.





Session 1: **Fundamentals of Large Language Models (10:30 AM – 12:00 PM)**

Speaker: Dr. V. Ajantha Devi, Founder & Research Head, AP3 Solutions, Chennai

The session provided a strong foundation on language modeling, tracing the evolution from traditional **N-gram models** to modern **Transformer architectures**. The speaker dissected the **Transformer model**, explaining the mechanisms of **self-attention**, **encoders**, and **decoders**. Key LLM architectures such as **BERT**, **GPT series**, **T5** and **LLaMA** were introduced with real-world application examples.



Session 2: **Hands-on Session (1:00 PM – 3:00 PM)**

Participants engaged in practical demonstrations using **Google Colab** to run basic LLM tasks. They explored:

- Text generation using pre-trained transformers
- Summarization tasks
- Basic question-answering models

The session enabled the participants to familiarize themselves with popular Hugging Face models and experiment with simple GenAI workflows.

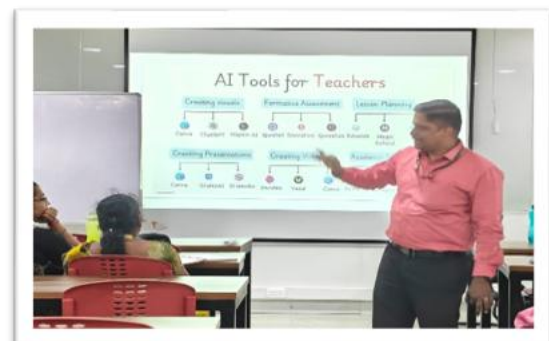


Day 2: Tuesday, 24th June 2025

Session 3: LLM Applications Across Domains (9:00 AM – 12:00 PM)

Speaker: Dr. N. Ganesh, Senior Associate Professor & International Relations

Coordinator, VIT, Chennai



This session broadened the understanding of **Generative AI paradigms**, covering **GANs**, **Variational Autoencoders (VAEs)**, **Transformers** and **Diffusion Models**. Dr. Ganesh elaborated on the cross-domain applicability of LLMs, especially in domains like **medical diagnosis**, **drug discovery**, **health record summarization** and **clinical chatbot development**.

Session 4: Hands-on Session (1:00 PM – 3:00 PM)

This practical session was centred on **Generative AI tools for research**. Participants learned to:

- Utilize open-source GenAI tools
- Generate synthetic datasets
- Automate literature reviews
- Perform domain-specific summarization tasks

The session concluded with participants creating basic research pipelines using LLMs.



Day 3: Wednesday, 25th June 2025

Session 5: Prompt Engineering and Interaction Design (9:00 AM – 12:00 PM)

Speaker: Ms. J. Abisha, GenAI Production Engineer, Altimetrik, Chennai

The session introduced the concept of **Prompt Engineering**, a critical skill in maximizing the efficiency of LLMs. Key topics covered included:

- Fundamentals of GenAI and LLM integration
- GPT vs. ChatGPT – capabilities and differences
- Working architecture of LLMs in healthcare
- Introduction to **LangChain** for context-aware applications

The session stressed how prompt engineering affects output quality and performance in real-time healthcare solutions.



Session 6: **Hands-on Session (1:00 PM – 2:00 PM)**

This final session was a **deep dive into prompt engineering**, where participants experimented with prompts for medical use cases:

- **Patient symptom summarization**
AI tools are increasingly used to process and condense unstructured patient data—like EHRs and clinical notes—into clear, concise summaries that highlight key symptoms, care gaps and treatment history, reducing clinician burden and improving workflow efficiency
- **Automated report generation**
Generative AI enables end-to-end clinical documentation by converting structured and unstructured data into reports, summaries and referrals.
- **Conversational agents for health guidance**
Chatbot-style conversational agents assist in treatment monitoring, patient education, symptom triage and care navigation via apps and messaging platforms.

Participants also explored healthcare-related datasets and built small chatbot prototypes using **LangChain** and **OpenAI APIs**.



Day 4: Thursday, 26th June 2025

The fourth day of the Faculty Development Program was marked by the prestigious **AgentCon – Chennai 2025**, a one-day expert conclave focusing on the transformative role of AI Agents in the era of Large Language Models and Generative AI. The event was supported by **Microsoft** and the **Global AI Community**, bringing together esteemed professionals and researchers from across the AI industry.



AgentCon - Chennai 2025



Date : 26 /06/2025
Time : 10 AM - 4 PM
Venue : AV Hall - 2

Made possible with the support of:

 **Microsoft**

 **global AI community**



Sammy Deprez
Generative AI Leader
Microsoft, Kenya



Bethany JepChumba
AI Cloud Advocate
(Developer Relations)
Microsoft, Kenya



Thanakarthik Kumar K
CEO
Sustainabyte
Technologies



Anand J
Manager & Consultant
IT Operations
VabTech



Saravanan Ganesan
Microsoft MVP
AI & IoT
TCS





Event Highlights

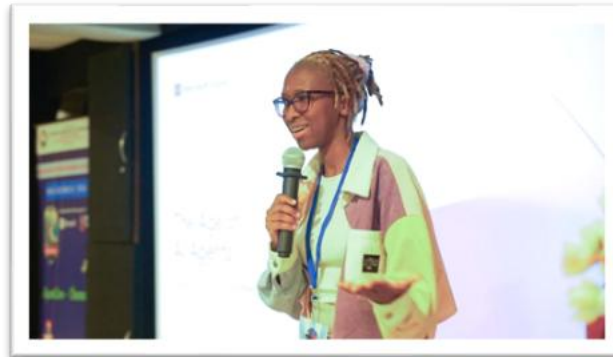
- **Inauguration & Welcome (10:00 AM – 10:10 AM)**

The session commenced with an introductory video and welcome address from the organizers, setting the context for a day filled with impactful discussions on AI Agents and their applications.

- **Keynote 1: “The Age of AI Agents”**

Speaker: **Bethany Jepchumba, AI Cloud Advocate, Microsoft, Kenya**

A powerful session exploring the growing influence of AI agents, their real-world applications and Microsoft's role in enabling AI-driven ecosystems.



- **Keynote 2: “Role of AI Agents in Manufacturing”**

Speaker: **Thanakarthik Kumar K, CEO, Sustainabyte Technologies**

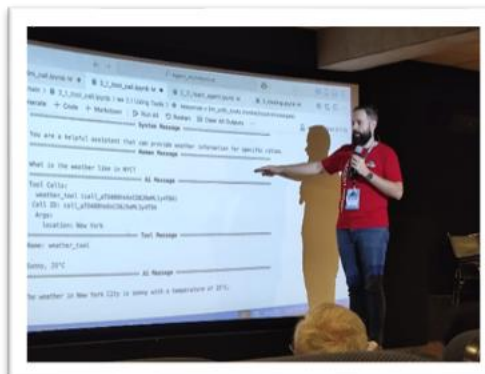
The speaker illustrated how autonomous AI agents are reshaping manufacturing processes through intelligent automation and decision-making.



- **Demo Talk: “Agent Architects: Building Smarter Brains, One Demo at a Time”**

Speaker: **Sammy Deprez, Generative AI Leader, Microsoft, Kenya**

A dynamic session with live demonstrations of agent orchestration using LLM-powered systems.



- **Tech Talk: “Modular Minds: Designing Specialized Agents with Semantic Kernel Plugins”**

Speaker: Saravanan Ganesan, Microsoft MVP, AI & IoT, TCS

A hands-on perspective on the integration of **Semantic Kernel plugins** for building modular and task-specific intelligent agents.



- **Closing Session: “Deep Dive into Multi-Agents Creation using Azure AI Foundry”**

Speaker: Anand J, Manager & Consultant – IT Operations, VabTech

A technical walkthrough of agent development pipelines using **Azure AI Foundry**, showcasing the future of collaborative agents in enterprise settings.



Day 5: Friday, 27th June 2025

Session 7: Real-world deployment of LLMs (9:00 AM – 12:00 PM)

Speaker: Dr. D. M. Ajay, Senior Research Engineer, HCLTech, Chennai



Real-world deployment of LLMs with emphasis on performance and ethics

- **Cost and latency** in real-time healthcare applications
- Ethical concerns like **hallucination**, **bias** and **privacy**
- Legal compliance with **HIPAA** and **GDPR** regulations

The session provided valuable insights into deploying LLMs **safely, efficiently and responsibly** in sensitive domains like healthcare.



Session 8: Hands-on Session (1:00 PM – 2:30 PM)

Participants engaged in a **practical session** on fine-tuning LLMs using **QLoRA** in Google Colab. The session covered:

- Dataset preparation
- Applying QLoRA for lightweight tuning
- Evaluating healthcare-specific LLM outputs

This hands-on experience enabled participants to tailor LLMs to domain-specific use cases effectively.

Valedictory Session (2:30 PM – 3:00 PM)

The FDP concluded with a **certificate distribution** and **valedictory address**. Organizers reflected on the week's sessions and encouraged participants to apply LLM knowledge in research, teaching, and innovation.





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