

Summer Training TR-103

Prompt Engineering

Day-14 Report

The fourteenth day of the training introduced Langflow, a powerful visual programming interface for designing and deploying language model-based workflows.

Introduction to Langflow:

Langflow is an open-source framework built on top of LangChain that enables the development of complex LLM-based applications using a flowchart-style builder. It simplifies the process of chaining components such as prompts, tools, memory, retrievers, and agents to design conversational systems or automation tools.

Installation:

Langflow supports two primary installation methods, catering to users with different preferences and system setups:

- **GUI Installation:** A browser-accessible interface that can be launched locally or hosted. This method provides a visual environment for creating, editing, and managing AI workflows through a drag-and-drop canvas.
- **CUI Installation (Command-Line Interface):** For users comfortable with the terminal, Langflow can be installed and managed via command-line tools. This allows more direct control, scripting, and integration into development pipelines.

Various Tasks Using Langflow:

Participants engaged in a series of progressively complex tasks that highlighted Langflow's practical applications and modularity.

Create It Using Langflow:

1. Build a Simple FAQ Bot:

- Components used: Prompt + LLM
- Objective: Develop a basic chatbot that answers frequently asked questions using static prompt templates.

2. Add FileLoader + Retriever – Document Bot:

- Components used: FileLoader + Retriever + LLM
- Objective: Upgrade the FAQ bot into a context-aware system capable of responding based on uploaded documents.

3. Integrate Memory – Multi-turn Conversations

- Components used: Agent + Tools
- Objective: Equip the bot with dynamic capabilities such as accessing Wikipedia for information and using a calculator for computations.

Capstone – Mini Customer Support Chatbot:

In the capstone project, participants applied all learned modules to create a mini customer support chatbot. This included document-based retrieval, memory handling, dynamic tool usage, and conversational flow design—culminating in a production-ready prototype built entirely in Langflow.