Guru Nanak Dev Engineering College

Training Diary - TR-102 Report

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Day 3

Training Summary

On the third day of training, we explored **AI playgrounds**, which are interactive platforms that allow users to experiment with prompts and model settings.
We worked with:

- **OpenAI Playground**
- **Cohere Playground**
- Briefly overviewed **Google AI Studio**

These tools help users understand how **Large Language Models (LLMs)** behave in response to different inputs, temperatures, and token settings.

Key Concepts with Notes

1. System Prompt vs User Prompt

- **System Prompt**: Defines the tone or behavior of the model (e.g., "You are a helpful tutor").
- **User Prompt**: The actual question or instruction.
  Combining both improves the relevance and quality of AI responses.

2. Temperature

- Controls randomness in AI output.
- **Low (0.1-0.3)** → Factual and precise
- **High (0.7-1)** → Creative and diverse

3. Tokens

- Units of language processed by AI (e.g., "future" might be 1 token, "intelligence" might be 2).
- Each model has a token limit for input and output. Understanding tokens helps in prompt budgeting.

4. Speed and Model Type

- Different models (like GPT-4, Gemini, Cohere, etc.) vary in speed, creativity, accuracy, and price.
- Choosing the right one depends on the use case.

Hands-On Activity

We tested prompt effects by writing a command that tokenizes a sentence:

Prompt:

"Print the tokens in the sentence: Artificial Intelligence is the future."

This helped us visualize how LLMs internally break down text for processing.

Mini Project Kickoff - URL Summarizer

We started building a mini project titled **"URL Summarizer"** using **Python** and **Generative AI APIs**.

Key Features Implemented:

- Accepts a user-input **URL**.
- Extracts content from the page.
- Generates a summary of the content using **GenAI**.
- Identifies and separates **internal and external hyperlinks**.
- Performs **keyword search** in the summary:
    - If the searched keyword (e.g., URL or topic) is found in the summary, it is highlighted.
    - If not found, the system searches in the original page content.
    - If the keyword is still not found, it displays a message like **"Keyword not present in the content."**

This hands-on project helped us apply prompt engineering, text analysis, and web data extraction techniques in a meaningful and practical way.

Learning Outcome

We developed an in-depth understanding of:

- Writing better prompts using system/user roles.
- Modifying temperature and token limits to get more precise results.
- Tokenization and prompt refinement through hands-on testing.
- Using AI models in Python to build real-world tools.

- Implementing keyword search logic across summarized and raw content for deeper analysis.