

Summer Training TR-103 Prompt Engineering

Day 4 Report

Introduction to Google AI Studio

- Google AI Studio is a web-based platform developed by Google for interacting with its generative AI model, Gemini.
- It provides a clean and intuitive interface for prompt-based experimentation and output generation.
- Users can input structured prompts and fine-tune model responses using configurable parameters.
- The platform is particularly useful for learners and developers to understand AI behaviour without writing code.
- It allows real-time testing and adjustment of prompts, enhancing understanding of how AI models process instructions.

Session Overview

- The session began with an introduction to the OpenAI Playground, a platform for working with large language models.
- However, due to its usage limitations (such as subscription or credit-based access), learners were directed toward Google AI Studio as a free and feature-rich alternative.
- Participants explored the Gemini model using Google AI Studio's user

interface, configuring parameters and crafting prompts to control the style and output of the AI.

Key Parameters in Prompt Configuration

1. Temperature:

- Controls the level of randomness or creativity in the AI's response.
- A lower value (e.g., 0.2) produces more focused and predictable outputs.
- A higher value (e.g., 0.8–1.0) generates more creative and diverse responses.

2. Max Tokens:

- Sets the maximum length of the output generated by the model.
- A lower value results in shorter responses, while a higher value allows for more detailed output.

3. Top_p:

- Regulates the diversity of word selection by the AI model.
- With a lower top_p (e.g., 0.5), the model selects from only the most probable words.
- A higher top_p (e.g., 0.9) allows greater variety in the output, increasing creativity.

These parameters work together to help users customize how deterministic or imaginative the model's responses should be.

Prompt Design and Structure

A key part of interacting with AI models is crafting effective prompts. During the session, prompt design was introduced with two main types:

- **System Prompt:**

- Sets the role or behavior of the AI.
- Example:

"You are a helpful assistant that explains complex concepts in simple terms."

- **User Prompt:**

- The actual instruction or query given by the user.
- Example:

"Explain the difference between Artificial Intelligence and Machine Learning."

Understanding how to design prompts properly is essential for generating meaningful and accurate responses.

API Key Generation

An API key was successfully generated from the Google AI Studio platform. This key is essential for:

- Accessing the Gemini model programmatically
- Integrating AI capabilities into custom applications
- Enabling backend communication with the AI through HTTP requests.