

Application Development with LLMs on Google Cloud (ADLGC)

ID GO-ADLGC Price on request Duration 1 day

Course Overview

In this course, you explore tools and APIs available on Google Cloud for integrating large language models (LLMs) into your application. After exploring generative AI options on Google Cloud, next you explore LLMs and prompt design in Vertex AI Studio. Then you learn about LangChain, an open-source framework for developing applications powered by language models. After a discussion around more advanced prompt engineering techniques, you put it all together to build a multi-turn chat application by using LangChain and the Vertex AI PaLM API.

Who should attend

Application developers and others who wish to leverage LLMs in applications.

Prerequisites

Completion of [Introduction to Developer Efficiency with Gemini on Google Cloud \(IDEGC\)](#) or equivalent knowledge.

Course Objectives

- Explore the different options available for using generative AI on Google Cloud.
- Use Vertex AI Studio to test prompts for large language models.
- Develop LLM-powered applications using LangChain and LLM models on Vertex AI.
- Apply prompt engineering techniques to improve the output from LLMs.
- Build a multi-turn chat application using the PaLM API and LangChain.

Detailed Course Outline

Module 1 - Introduction to Generative AI on Google Cloud

Topics:

- Vertex AI on Google Cloud
- Generative AI options on Google Cloud
- Introduction to course use case

Objectives:

- Explore the different options available for using generative AI on Google Cloud.

Module 2 - Vertex AI Studio

Topics:

- Introduction to Vertex AI Studio
- Available models and use cases
- Designing and testing prompts in the Google Cloud console
- Data governance in Vertex AI Studio

Objectives:

- Use Vertex AI Studio to test prompts for large language models.
- Understand how Vertex AI Studio keeps your data secure

Activities:

- Lab: Exploring Vertex AI Studio

Module 3 - LangChain Fundamentals

Topics:

- Introduction to LangChain
- LangChain concepts and components
- Integrating the Vertex AI PaLM APIs
- Question/Answering Chain using PaLM API

Objectives:

- Understand basic concepts and components of LangChain
- Develop LLM-powered applications using LangChain and LLM models on Vertex AI

Activities:



- Lab: Getting Started with LangChain + Vertex AI PaLM API

Module 4 - Prompt Engineering

Topics:

- Review of few-shot prompting
- Chain-of-thought prompting
- Retrieval augmented generation (RAG)
- ReAct

Objectives:

- Apply prompt engineering techniques to improve the output from LLMs.
- Implement a RAG architecture to ground LLM models.

Activities:

- Lab: Prompt Engineering Techniques

Module 5 - Creating Custom Chat Applications with Vertex AI PaLM API

Topics:

- LangChain for chatbots
- Memory for multi-turn chat
- Chat retrieval

Objectives:

- Understand the concept of memory for multi-turn chat applications.
- Build a multi-turn chat application by using the PaLM API and LangChain.

Activities:

- Lab: Implementing RAG Using LangChain

Training Centres worldwide

