

Training: Google Cloud
Application Development with LLMs on Google Cloud

TRAINING GOALS:

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.

This is one of five courses that comprise the **Developer Efficiency Learning Pack** *Developer Efficiency Learning Pack.pdf*

A packaged offer designed to equip your organization with the skills needed to enhance productivity, increase efficiency, and accelerate development velocity using Generative AI. This learning pack is specifically designed to accompany the Google Cloud Consulting Developer and IT Efficiency Services Offer.

What you'll learn:

- 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.

Audience

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

CONSPECT:

- 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.
- 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
- 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
- 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
- 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

REQUIREMENTS:

Completion of "Introduction to Developer Efficiency on Google Cloud" or equivalent knowledge.

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by Google Cloud

TRAINER:

Authorized Google Cloud Trainer