Application Development with LLMs on Google Cloud

Duration: 1 Day Course Code: GO6592

Overview:

In this course, you'll dive into the details of using Large Language Models (LLMs) in your applications.

You'll start by exploring the core principles that underpin prompting LLMs. Next, you will focus on Google's latest family of models, Gemini. You'll explore the various Gemini models and their multimodal capabilities. This includes a deep dive into effective prompt design and engineering within the Vertex AI Studio environment. Then, the course moves to application development frameworks and how to implement these concepts into your applications.

- This course does have a deep dive on topics around developing agents using Agent Development Kit and deployment of agents on Google Cloud using solutions such as Agent Engine.

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Target Audience:

This course is intended for customers who want to use large language models (LLMs) in their applications, including working with prompt design, Vertex AI Studio, and application development frameworks on Google Cloud.

Objectives:

- **After this course participants should be able to:**
- 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 generative AI
- Apply advanced prompt engineering techniques to improve the output from LLMs
- Build a multi-turn chat application using the Gemini API and LangChain

Prerequisites:

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

Testing and Certification

Follow-on-Courses:

None

Content:

Introduction to Generative AI on Google Cloud

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

Vertex AI Studio

- Introduction to Vertex AI Studio
- Designing and testing prompts
- Data governance in Vertex AI Studio
- Lab: Getting Started with the Vertex AI Studio User Interface

Generative AI Fundamentals

- Introduction to grounding
- Integrating the Vertex AI Gemini APIs
- Chat, memory and grounding
- Search principles
- Lab: Getting Started with LangChain + Vertex AI Gemini API

Prompt Engineering

- Review of few-shot prompting
- Chain-of-thought prompting and thinking budgets
- Meta prompting, multi-step, and panel prompts
- RAG and ReAct
- Lab: Advanced Prompt Architectures

Creating Custom Chat Applications with Vertex AI Gemini API

- LangChain for chatbots
- ADK for chatbots
- Chat retrieval
- Lab: Implementing RAG Using LangChain

Additional Information:

Official course book provided to participants.

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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