Training: Google Cloud
Develop Search and Agents with AI Applications

TRAINING GOALS:

In this course, you learn how to use Vertex AI Search and Conversational Agents to create search engines and chat applications. You will learn how to leverage Vertex AI Search for grounding your gen AI-powered applications. You will then explore how to integrate these search engines and chat applications into your own applications. Finally, you learn how to use the agents built in AI Applications in multi-agent workflows.

What you'll learn

- Explore Vertex AI as a platform for enterprise-ready generative AI.
- Create and deploy a search engine using Vertex AI Search.
- Ground outputs from foundation models using Vertex AI Search.
- Create a chat application using natural language in Conversational Agents.
- Integrate your agents into multi-agent workflows using Agent Development Kit and Vertex AI Agent Builder.

Audience

This course is for:

- Developers & Software Engineers
- AI/ML Engineers
- Data Engineers

Products

- Gemini
- AI Applications
- Vertex AI

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CONSPECT:

- Vertex AI and AI Applications
  - Topics
    - Vertex AI for generative AI
    - AI Applications: Search, Recommendations, and Agents
    - Use cases for Vertex AI Search and Agents
  - Objectives
    - Explore the options in Vertex AI for generative AI.
    - Identify the role of AI Applications: Search, Recommendations, and Agents.
    - Examine use cases for Vertex AI Search and Agents
- Vertex AI Search
  - Topics
    - Basic concepts: apps, engines, and data stores
    - Data sources and preparing data
    - Creating a data store
    - Configuring Vertex AI Search
    - Deploy Vertex AI Search
  - Objectives
    - Create enterprise-grade generative AI applications with AI Applications.
    - Choose the appropriate engine for a search or conversation app.
    - Import data into a data store.
    - Create and configure a custom search app.
  - Activities
    - Lab: Integrating Vertex AI Search Into Your Application
- Grounding Applications
  - Topics
    - Why is grounding important?
    - Retrieval augmented generation (RAG)
    - Grounding options on Google Cloud
    - Testing grounding in Vertex AI Studio
    - Grounding using the Vertex AI SDK
  - Objectives
    - Identify why grounding is important.
    - Leverage Retrieval-Augmented Generation (RAG).
    - Use grounding options on Google Cloud.

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        - Test grounding using the Vertex AI Studio and SDK.
    - Activities
        - Lab: Grounding LLMs with Vertex AI Search
- Conversational Agents
    - Topics
        - Customer Engagement Suite (CES)
        - Deterministic vs. generative agents
        - Playbooks
        - Data store tools
    - Objectives
        - Create conversational agents.
        - Manage conversations with playbooks.
        - Use examples to improve a playbook’s response.
        - Leverage data store tools to perform grounding for your playbook’s responses.
    - Activities
        - Lab: Create a Conversational Agent Playbook that connects to an unstructured data store tool
- Multi-agent Applications on Vertex AI
    - Topics
        - Multi-agent applications and agentic AI
        - Introduction to Agent Developer Kit (ADK)
        - Vertex AI Agent Garden
        - Vertex AI Agent Engine
        - Putting it all together with AI Applications
    - Objectives
        - Explore the features and benefits of the Agent Development Kit (ADK).
        - Accelerate agent development with Agent Garden.
        - Use ADK to build multi-agent applications.
        - Leverage a Data Store tool from an ADK agent
    - Activities
        - Lab: Using ADK and multiple agents with AI Applications

REQUIREMENTS:

- Knowledge of generative AI basic concepts and programming knowledge (Python)

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Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by Google Cloud (course completion).

TRAINER:

Authorized Google Cloud Trainer

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