



Cloud Hero: GenAI Solutions with Vertex AI and ADK

Course description

Learn to build modern Generative AI applications using Vertex AI, Gemini, Multimodal AI, Prompt Engineering, and the Agent Development Kit (ADK) through hands-on Cloud Hero challenges.

Through practical labs and real-world development scenarios, learners will gain hands-on experience creating, testing, and deploying AI-powered applications capable of understanding text, images, and multimodal inputs while orchestrating complex workflows through AI agents.

- Course level: Introductory
- Duration: 1 day

Activities

This course includes gamified cloud hero learning experience, hands-on labs, prompt engineering workshops, multimodal ai exercises, agent development challenges, multi-agent architecture activities, and real-world ai solution building to reinforce learning.

Course objectives

In this course, you will learn to:

- Understand the fundamentals of Vertex AI and Gemini.
- Create and optimize prompts using prompt engineering techniques.

- Build multimodal AI applications using Gemini.
- Analyze images and other content using generative AI.
- Develop AI-powered applications using Vertex AI Studio.
- Build intelligent agents using the Agent Development Kit (ADK).
- Create scalable multi-agent architectures.
- Apply Generative AI best practices to real-world applications.

Key features

- Introduction to Generative AI Development
- Vertex AI Studio for Rapid Prototyping
- Prompt Engineering Fundamentals
- Multimodal AI with Gemini
- Agent-Based AI Development
- Multi-Agent System Design
- Cloud-Native Generative AI Solutions
- Challenge-Based Hands-On Learning

Intended audience

This course is intended for:

- Application Developers
- Software Engineers
- AI Developers
- Cloud Developers
- Generative AI Practitioners
- Solution Architects
- Technical Professionals New to Vertex AI and ADK

Prerequisites

We recommend that attendees of this course have:

- Basic Python programming knowledge.
- Familiarity with APIs and API concepts.

- Interest in Generative AI application development.
- No prior ADK experience required.

Products covered

- Vertex AI
- Vertex AI Studio
- Gemini
- Agent Development Kit (ADK)
- BigQuery ML

Course outline

Module 01 - Get Started with Vertex AI Studio

- Vertex AI Studio Overview
- Gemini Models
- Prompt Testing
- AI Application Prototyping

Module 02 - Generative AI with Vertex AI: Prompt Design

- Prompt Engineering Fundamentals
- Prompt Structures
- Prompt Optimization
- Generative AI Best Practices

Module 03 - Multimodality with Gemini

- Gemini Multimodal Capabilities
- Image Understanding
- Text and Visual Analysis
- Multimodal Prompting

Module 04 - Get Started with Agent Development Kit (ADK)

- Agent Development Kit Overview
- AI Agent Architecture
- Tool Integration
- Multi-Agent Systems

- Agent Deployment

Certification details

Participants receive a Cloud Hero completion badge and recognition upon successful completion of all challenge activities.

FAQs

Who should attend this Cloud Hero?

This Cloud Hero is designed for developers and technical professionals interested in building Generative AI applications and AI agents using Google Cloud technologies.

Is prior Vertex AI experience required?

No. The course is designed for learners who are new to Vertex AI and ADK, though basic cloud familiarity is beneficial.

Is this a hands-on learning experience?

Yes. The entire Cloud Hero is built around practical labs and challenge-based activities.

What programming skills are required?

Basic Python programming knowledge and familiarity with API concepts are recommended.

What is ADK?

The Agent Development Kit (ADK) is a framework used to build intelligent AI agents and multi-agent systems capable of performing complex workflows.

What AI capabilities are covered?

The course covers prompt engineering, multimodal AI, image analysis, AI agents, multi-agent architectures, and Generative AI application development.

How long does the Cloud Hero take?

The complete Cloud Hero experience takes approximately 255 minutes.

Will I receive a certificate?

Participants typically earn a Cloud Hero completion badge upon successful completion of all challenge activities.