



Cloud Hero: Gemini & Vertex AI

Course description

In this comprehensive course, participants will dive deep into Google Cloud's cutting-edge generative AI capabilities, focusing on the powerful Gemini family of models and the robust Vertex AI platform. You will gain a solid understanding of how Gemini's multimodal capabilities integrate seamlessly with Vertex AI's MLOps features to build, deploy, and scale intelligent applications. This training emphasizes practical application, providing insights into leveraging these technologies to solve real-world business challenges and drive innovation. By the end of the course, you will be equipped to design, implement, and manage generative AI projects within your organization using Google Cloud's leading tools.

- **Course level:** Intermediate
- **Duration:** 1 day

Activities

This course includes interactive presentations, extensive hands-on labs, live demonstrations, and collaborative group exercises to solidify understanding and practical skills.

Course objectives

In this course, you will learn to:

- Summarize the core concepts, architecture, and capabilities of Google's Gemini models and Vertex AI platform.
- Effectively utilize Vertex AI's Generative AI Studio for prompt engineering and model interaction with Gemini.
- Design and implement advanced prompt engineering strategies for Gemini, leveraging its multimodal and reasoning capabilities.
- Understand and apply responsible AI principles and practices when developing solutions with Gemini and Vertex AI.
- Explain the process of fine-tuning Gemini models using Vertex AI to adapt them to specific organizational data and tasks.
- Build, deploy, monitor, and manage generative AI applications on Vertex AI, integrating Gemini models into practical workflows.
- Discuss project planning, MLOps considerations, and best practices for implementing scalable generative AI solutions with Gemini and Vertex AI in an enterprise environment.

Intended audience

This course is intended for professionals looking to leverage advanced generative AI capabilities on Google Cloud:

- AI/ML Engineers
- Data Scientists
- Cloud Architects
- Software Developers
- Technical Project Managers
- Solutions Architects

- MLOps Engineers

Prerequisites

We recommend that attendees of this course have:

- Intermediate knowledge of Python programming.
- Basic understanding of machine learning concepts.
- Familiarity with Google Cloud Platform (GCP) fundamentals (e.g., BigQuery, Cloud Storage).
- Prior experience with basic prompt engineering is beneficial but not strictly required.

Course outline

Module 01 – Getting Started with the Vertex AI Gemini API using cURL

Topics

- Gemini API Fundamentals
- REST API Integration
- cURL Commands
- Prompt-Based Interactions

Activities

- Lab: GSP1228 – Getting Started with the Vertex AI Gemini API with cURL
- API Exploration Exercise
- Prompt Testing Challenge

Module 02 – Introduction to Function Calling with Gemini

Topics

- Function Calling Concepts

- Tool Integration
- Structured Responses
- Workflow Automation

Activities

- Lab: GSP1227 – Introduction to Function Calling with Gemini
- Function Calling Workshop
- AI Workflow Challenge

Module 03 – Getting Started with the Vertex AI Gemini API and Python SDK

Topics

- Vertex AI Python SDK
- Gemini Integration in Python
- Code Generation
- Information Extraction

Activities

- Lab: GSP1209 – Getting Started with the Vertex AI Gemini API and Python SDK
- Python Development Exercise
- SDK Integration Workshop

Module 04 – Building AI Applications with Streamlit, Cloud Run, and Gemini

Topics

- Streamlit Framework
- Cloud Run Deployment

- Gemini API Integration
- AI Application Architecture

Activities

- Lab: GSP1229 – Utilize the Streamlit Framework with Cloud Run and the Gemini API in Vertex AI
- Application Deployment Challenge
- End-to-End AI App Workshop

Your course overview ends here.
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About CloudThat

Established in 2012, CloudThat is an award-winning company and the first in India to offer cloud training and consulting services for individuals and enterprises worldwide. Recently, it won Google Cloud's New Training Partner of the Year Award for 2025, becoming the first company in the world in 2025 to hold awards from all three major cloud giants: AWS, Microsoft, and Google. CloudThat notably won consecutive AWS Training Partner of the Year (APJ) awards in 2023 and 2024 and the Microsoft Training Services Partner of the Year Award in 2024, bringing its total award count to an impressive 12 awards in the last 8 years.

CloudThat specializes in Cloud Migration, Data Platforms, DevOps, IoT, and cutting-edge technologies like Gen AI & AI/ML. As a Microsoft Solutions Partner, AWS Premier Tier Training Partner, Google Cloud Platform Partner, and collaborator with leading organizations like HPE, Oracle, Nvidia and Databricks, CloudThat has trained over 850,000 professionals across 600+ cloud certifications, empowering students and professionals worldwide to advance their skills and careers.

To know more about our cloud certification training, email at sales@cloudthat.com or call us at [+91-8880002200](tel:+91-8880002200) or [+1-8555588830](tel:+1-8555588830) for those from outside India.