

# Google Cloud Machine Learning Engineer

## **Course Overview**

A Machine Learning Engineer designs, builds, productionizes, optimizes, operates, and maintains ML systems. This learning path guides you through a curated collection of concepts and labs that provide you with real-world, hands-on experience using Google Cloud technologies essential to the ML Engineer role.

**Duration:** 10 days / 80 hours

**Level:** Professional

**Prerequisites:** Basic knowledge of Python and SQL query is required.

**Course Outcome:** Learner can take **Google Cloud Certified Professional Machine Learning Engineer** exam

## **Table of Content**

### **Introduction to AI and Machine Learning on Google Cloud**

- AI Foundations
- AI Development Options
- AI Development Workflow
- Generative AI

### **Launching into Machine Learning**

- Get to Know Your Data: Improve Data through Exploratory Data Analysis
- Machine Learning in Practice
- Training AutoML Models Using Vertex AI
- BigQuery Machine Learning: Develop ML Models Where Your Data Lives
- Optimization
- Generalization and Sampling

### **Build, Train and Deploy ML Models with Keras on Google Cloud**

- Introduction to the TensorFlow Ecosystem
- Design and Build an Input Data Pipeline
- Building Neural Networks with the TensorFlow and Keras API
- Training at Scale with Vertex AI

### **Feature Engineering**

- Introduction to Vertex AI Feature Store
- Raw Data to Features

- Feature Engineering
- Preprocessing and Feature Creation
- Feature Crosses - TensorFlow Playground
- Introduction to TensorFlow Transform

### **Machine Learning in the Enterprise**

- Understanding the ML Enterprise Workflow
- Data in the Enterprise
- Science of Machine Learning and Custom Training
- Vertex Vizier Hyperparameter Tuning
- Prediction and Model Monitoring Using Vertex AI
- Vertex AI Pipelines
- Best Practices for ML Development