

Machine Learning on Google Cloud

Duration: 5 Days**Prerequisites:**

To get the most out of this course, participants should have:

- Some familiarity with basic machine learning concepts
- Basic proficiency with a scripting language, preferably Python

Course Description:

Build Vertex AI AutoML models without writing a single line of code; build BigQuery ML models, create Vertex AI custom training jobs using Keras and TensorFlow, use Vertex AI Feature Store for data management, use feature engineering for model improvement, determine the appropriate data preprocessing options for your use case, leverage best practices to implement machine learning on Google Cloud.

Target Audience:

This class is primarily intended for the following participants:

- Aspiring machine learning data analysts, data scientists, and data engineers
- Learners who want exposure to ML and use Vertex AI, AutoML, BigQuery ML, Vertex AI Feature Store, Vertex AI Workbench, Dataflow, Vertex AI Vizier for hyperparameter tuning, and TensorFlow/Keras

Course Outlines:**Module 1: How Google Does Machine Learning**

- Describe the Vertex AI platform and how it is used to quickly build, train, and deploy AutoML machine learning models without writing a single line of code.
- Describe best practices for implementing machine learning on Google Cloud.
- Develop a data strategy around machine learning.
- Examine use cases that are then reimaged from an ML lens.
- Use the Google Cloud platform tools and environment to do ML.
- Learn from Google's experience to avoid common pitfalls.
- Perform data science tasks in online, collaborative notebooks.

Module 2: Launching into Machine Learning

- Describe how to improve data quality.
- Perform exploratory data analysis.
- Build and train supervised learning models.
- Describe AutoML and how to build, train, and deploy an ML model without writing a single line of code.
- Describe BigQuery ML and its benefits.
- Optimize and evaluate models by using loss functions and performance metrics.
- Mitigate common problems that arise in machine learning.
- Create repeatable and scalable training, evaluation, and test datasets.

Module 3: TensorFlow on Google Cloud

- Create TensorFlow and Keras machine learning models.
- Describe TensorFlow key components.
- Use the tf.data library to manipulate data and large datasets.
- Build a ML model that uses tf.keras preprocessing layers.
- Use the Keras Sequential and Functional APIs for simple and advanced model creation.
- Train, deploy, and productionalize ML models at scale with the Vertex AI Training Service.

Module 4: Feature Engineering

- Describe Vertex AI Feature Store.
- Compare the key required aspects of a good feature
- Use tf.keras.preprocessing utilities for working with image data, text data, and sequence data.
- Perform feature engineering by using BigQuery ML, Keras, and TensorFlow

Module 5: Machine Learning in the Enterprise

- Understand the tools required for data management and governance.
- Describe the best approach for data preprocessing: from providing an overview of Dataflow and Dataprep to using SQL for preprocessing tasks.
- Explain how AutoML, BigQuery ML, and custom training differ and when to use a particular framework.
- Describe hyperparameter tuning by using Vertex AI Vizier to improve model performance.
- Explain prediction and model monitoring and how Vertex AI can be used to manage ML models.
- Describe the benefits of Vertex AI Pipelines.
- Describe best practices for model deployment and serving, model monitoring, Vertex AI Pipelines, and artifact organization.

REGISTER NOW!

training@trends.com.ph
(+632) 8863-2123
www.trendssacademy.com.ph