

Machine Learning on Google Cloud (MLGC)

ID GO-MLGC Duración 5 días

Quién debería asistir

- Aspiring machine learning data scientists and engineers.
- Machine learning scientists, data scientists, and data analysts who want exposure to machine learning in the cloud using TensorFlow 2.x and Keras.
- Data engineers.

Prerrequisitos

- Some familiarity with basic machine learning concepts.
- Basic proficiency with a scripting language - Python preferred.

Objetivos del curso

- Frame a business use case as a machine learning problem.
- Describe how to improve data quality.
- Perform exploratory data analysis.
- Build and train supervised learning models.
- Optimize and evaluate models using loss functions and performance metrics.
- Create repeatable and scalable training, evaluation, and test datasets.
- Implement machine learning models using Keras and TensorFlow 2.x.
- Understand the impact of gradient descent parameters on accuracy, training speed, sparsity, and generalization.
- Represent and transform features.
- Train models at scale with AI Platform.

Contenido del curso

The course includes presentations, demonstrations, and hands-on labs.

Module 1: How Google Does Machine Learning

- Develop a data strategy around machine learning.
- Examine use cases that are then reimaged through an ML lens.
- Recognize biases that ML can amplify.

- Leverage Google Cloud Platform tools and environment to do ML.
- Learn from Google's experience to avoid common pitfalls.
- Carry out data science tasks in online collaborative notebooks.
- Invoke pre-trained ML models from Cloud AI Platform.

Module 2: Launching into Machine Learning

- Describe how to improve data quality.
- Perform exploratory data analysis.
- Build and train supervised learning models.
- Optimize and evaluate models 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: Introduction to TensorFlow 2.x

- Create TensorFlow 2.x and Keras machine learning models.
- Describe Tensorflow 2.x key components.
- Use the tf.data library to manipulate data and large datasets.
- Use the Keras Sequential and Functional APIs for simple and advanced model creation.
- Train, deploy, and productionalize ML models at scale with Cloud AI Platform.

Module 4: Feature Engineering

- Compare the key required aspects of a good feature.
- Combine and create new feature combinations through feature crosses.
- Perform feature engineering using BQML, Keras, and TensorFlow 2.x.
- Understand how to preprocess and explore features with Cloud Dataflow and Cloud Dataprep.
- Understand and apply how TensorFlow transforms features.

Module 5: Art and Science of Machine Learning

- Optimize model performance with hyperparameter tuning.
- Experiment with neural networks and fine-tune

performance.

- Enhance ML model features with embedding layers.

Centros de Entrenamiento Mundial

