

Szkolenie: Google Cloud Machine Learning with TensorFlow on Google Cloud Platform



Cel szkolenia:

What is machine learning, and what kinds of problems can it solve? What are the five phases of converting a candidate use case to be driven by machine learning, and why is it important that the phases not be skipped? Why are neural networks so popular now? How can you set up a supervised learning problem and find a good, generalizable solution using gradient descent and a thoughtful way of creating datasets? Learn how to write distributed machine learning models that scale in Tensorflow, scale out the training of those models. and offer high-performance predictions. Convert raw data to features in a way that allows ML to learn important characteristics from the data and bring human insight to bear on the problem. Finally, learn how to incorporate the right mix of parameters that yields accurate, generalized models and knowledge of the theory to solve specific types of ML problems. You will experiment with end-to-end ML, starting from building an ML-focused strategy and progressing into model training, optimization, and productionalization with hands-on labs using Google Cloud Platform.

Course objectives:

- Think strategically and analytically about ML as a business process and consider the fairness implications with respect to ML
- How ML optimization works and how various hyperparameters affect models during optimization
- How to write models in TensorFlow using both pre-made estimators as well as custom ones and train them locally or in Cloud AI Platform
- Why feature engineering is critical to success and how you can use various technologies including Cloud Dataflow and Cloud Dataprep

Audience:

Data Engineers and programmers interested in learning how to apply machine learning in practice. Anyone interested in learning how to leverage machine learning in their enterprise.

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

Plan szkolenia:

- How Google Does Machine Learning
 - Develop a data strategy around machine learning.

- Examine use cases that are then reimagined 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 Datalab.
- Launching into Machine Learning
 - Identify why deep learning is currently popular.
 - 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.
- Intro to TensorFlow
 - Create machine learning models in TensorFlow.
 - Use the TensorFlow libraries to solve numerical problems.
 - Troubleshoot and debug common TensorFlow code pitfalls.
 - Use `tf_estimator` to create, train, and evaluate an ML model.
 - Train, deploy, and productionalize ML models at scale with Cloud ML Engine.
- Feature Engineering
 - Turn raw data into feature vectors.
 - Preprocess and create new feature pipelines with Cloud Dataflow.
 - Create and implement feature crosses and assess their impact.
 - Write TensorFlow Transform code for feature engineering.
- The Art and Science of ML
 - Optimize model performance with hyperparameter tuning.
 - Experiment with neural networks and fine-tune performance.
 - Enhance ML model features with embedding layers.
 - Create reusable custom model code with the Custom Estimator.

Wymagania:

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

- Experience coding in Python
- Knowledge of basic statistics
- Knowledge of SQL and cloud computing (helpful)

Poziom trudności



Certyfikaty:

The participants will obtain certificates signed by Google Cloud Platform.

Prowadzący:

Authorized Google Cloud Platform Trainer.