



DP-3014: Implementing a Machine Learning Solution with Azure Databricks

Course ID #: 7000-912-ZZ-Z

Hours: 7

Course Content

Course Description:

Azure Databricks is a cloud-scale platform for data analytics and machine learning. Data scientists and machine learning engineers can use Azure Databricks to implement machine learning solutions at scale.

Prerequisites:

This course assumes that you have experience of using Python to explore data and train machine learning models with common open source frameworks, like Scikit-Learn, PyTorch, and TensorFlow.

Topics:

Lesson 1: Explore Azure Databricks

- Introduction
- Get started with Azure Databricks
- Identify Azure Databricks workloads
- Understand key concepts
- Exercise - Explore Azure Databricks
- Knowledge check
- Summary

Lesson 2: Use Apache Spark in Azure Databricks

- Introduction
- Get to know Spark
- Create a Spark cluster
- Use Spark in notebooks
- Use Spark to work with data files
- Visualize data
- Exercise - Use Spark in Azure Databricks
- Knowledge check
- Summary

Lesson 3: Train a machine learning model in Azure Databricks

- Introduction
- Understand principles of machine learning
- Machine learning in Azure Databricks
- Prepare data for machine learning
- Train a machine learning model
- Evaluate a machine learning model
- Exercise - Train a machine learning model in Azure Databricks
- Knowledge check
- Summary

Lesson 4: Use MLflow in Azure Databricks

- Introduction
- Capabilities of MLflow
- Run experiments with MLflow
- Register and serve models with MLflow
- Exercise - Use MLflow in Azure Databricks
- Knowledge check
- Summary



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Lesson 5: Tune hyperparameters in Azure Databricks

- Introduction
- Optimize hyperparameters with Hyperopt
- Review Hyperopt trials
- Scale Hyperopt trials
- Exercise - Optimize hyperparameters for machine learning in Azure Databricks
- Knowledge check
- Summary

Lesson 6: Use AutoML in Azure Databricks

- Introduction
- What is AutoML?
- Use AutoML in the Azure Databricks user interface
- Use code to run an AutoML experiment
- Exercise - Use AutoML in Azure Databricks
- Knowledge check
- Summary

Lesson 7: Train deep learning models in Azure Databricks

- Introduction
- Understand deep learning concepts
- Train models with PyTorch
- Distribute PyTorch training with Horovod
- Exercise - Train deep learning models on Azure Databricks
- Knowledge check
- Summary

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