Implementing a Machine Learning Solution with Azure Databricks (DP-3014)

COURSE OVERVIEW

Data scientists and machine learning engineers can use Azure Databricks to implement machine learning solutions at scale.

WHO WILL BENEFIT FROM THIS COURSE?

Data scientists and machine learning engineers.

PREREQUISITES

This learning path 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. Consider completing the Create machine learning models learning path before starting this one.

COURSE OBJECTIVES

Students will learn to:

- Explore Azure Databricks
- Use Apache Spark in Azure Databricks
- Train a machine learning model in Azure Databricks
- Use MLflow in Azure Databricks
- Tune hyperparameters in Azure Databricks
- Use AutoML in Azure Databricks
- Train deep learning models in Azure Databricks

COURSE OUTLINE

Module 1: Explore Azure Databricks

- Provision an Azure Databricks workspace.
- Identify core workloads and personas for Azure Databricks.
- Describe key concepts of an Azure Databricks solution.

Module 2: Use Apache Spark in Azure Databricks

- Describe key elements of the Apache Spark architecture.
- Create and configure a Spark cluster.
- Describe use cases for Spark.
- Use Spark to process and analyze data stored in files.
- Use Spark to visualize data.

Module 3: Train a machine learning model in Azure Databricks
- Prepare data for machine learning
- Train a machine learning model
- Evaluate a machine learning model

Module 4: Use MLflow in Azure Databricks
- Use MLflow to log parameters, metrics, and other details from experiment runs.
- Use MLflow to manage and deploy trained models.

Module 5: Tune hyperparameters in Azure Databricks
- Use the Hyperopt library to optimize hyperparameters.
- Distribute hyperparameter tuning across multiple worker nodes.

Module 6: Use AutoML in Azure Databricks
- Use the AutoML user interface in Azure Databricks
- Use the AutoML API in Azure Databricks

Module 7: Train deep learning models in Azure Databricks
- Train a deep learning model in Azure Databricks
- Distribute deep learning training by using the Horovod library

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