

## DP-3014: Implement a Machine Learning solution with Azure Databricks

### Course Details

**Course Code:** DP-3014

**Duration:** 1 day

#### Notes:

- This course syllabus should be used to determine whether the course is appropriate for the students, based on their current skills and technical training needs.
- Course content, prices, and availability are subject to change without notice.
- Terms and Conditions apply

*Elements of this syllabus are subject to change.*

#### About this course

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 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.

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### Explore Azure Databricks

Azure Databricks is a cloud service that provides a scalable platform for data analytics using Apache Spark.

#### Learning objectives

In this module, you'll learn how to:

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

### Use Apache Spark in Azure Databricks

Azure Databricks is built on Apache Spark and enables data engineers and analysts to run Spark jobs to transform, analyze and visualize data at scale.

#### Learning objectives

In this module, you'll learn how to:

- 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.

### Train a machine learning model in Azure Databricks

Machine learning involves using data to train a predictive model. Azure Databricks support multiple commonly used machine learning frameworks that you can use to train models.

#### Learning objectives

In this module you'll learn how to:

- Prepare data for machine learning
- Train a machine learning model
- Evaluate a machine learning model

### Use MLflow in Azure Databricks

MLflow is an open source platform for managing the machine learning lifecycle that is natively supported in Azure Databricks.

### Learning objectives

In this module, you'll learn how to:

- Use MLflow to log parameters, metrics, and other details from experiment runs.
- Use MLflow to manage and deploy trained models.

### Tune hyperparameters in Azure Databricks

Tuning hyperparameters is an essential part of machine learning. In Azure Databricks, you can use the Hyperopt library to optimize hyperparameters automatically.

#### Learning objectives

In this module, you will learn how to:

- Use the Hyperopt library to optimize hyperparameters.
- Distribute hyperparameter tuning across multiple worker nodes.

### Use AutoML in Azure Databricks

AutoML in Azure Databricks simplifies the process of building an effective machine learning model for your data.

#### Learning objectives

In this module, you'll learn how to:

- Use the AutoML user interface in Azure Databricks
- Use the AutoML API in Azure Databricks

### Train deep learning models in Azure Databricks

Deep learning uses neural networks to train highly effective machine learning models for complex forecasting, computer vision, natural language processing, and other AI workloads.

#### Learning objectives

In this module, you'll learn how to:

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