APPLIED SKILLS

Train and deploy a machine learning model with Azure Machine Learning

Days	SKILL LEVEL	DELIVERY METHOD	Role	TECHNOLOGY
1	Intermediate	VILT/ILT	Engineer	Azure

Course Overview

To train a machine learning model with Azure Machine Learning, you need to make data available and configure the necessary compute. After training your model and tracking model metrics with MLflow, you can decide to deploy your model to an online endpoint for real-time predictions. Throughout this learning path, you explore how to set up your Azure Machine Learning workspace, after which you train and deploy a machine learning model.

Tasks performed.

- Set up a development environment in Azure Machine Learning
- Prepare data for model training
- Create and configure a model training script as a command job
- Manage artifacts by using MLflow
- Deploy a model for real-time consumption

Prerequisites

- None

Prepare for the assessment.

Module 1: Make data available in Azure Machine Learning

Learn about how to connect to data from the Azure Machine Learning workspace. You're introduced to datastores and data assets.

Learning objectives

In this module, you learn how to:

- Access data by using Uniform Resource Identifiers (URIs).
- Connect to cloud data sources with datastores.
- Use data asset to access specific files or folders.

Module 2: Work with compute targets in Azure Machine Learning

Learn how to work with compute targets in Azure Machine Learning. Compute targets allow you to run your machine learning workloads. Explore how and when you can use a compute instance or compute cluster.

Learning objectives

In this module, you'll learn how to:

- Choose the appropriate compute target.
- Create and use a compute instance.
- Create and use a compute cluster.

Module 3: Deploy PaaS solutions with Azure SQL

Provision and deploy Azure SQL Database and Azure SQL managed instance. Select the appropriate options when performing a migration to the SQL PaaS platform.

Learning objectives

After completing this module, you will be able to:

- Gain an understanding SQL Server in a Platform as a Service (PaaS) offering
- Understand PaaS provisioning and deployment options
- Understand elastic pools
- Examine Azure SQL Managed Instances
- Explore Azure SQL Edge
- Configure a template for PaaS deployment

Module 4: Work with environments in Azure Machine Learning

Learn how to use environments in Azure Machine Learning to run scripts on any compute target.

Learning objectives

In this module, you'll learn how to:

- Understand environments in Azure Machine Learning.

- Explore and use curated environments.

- Create and use custom environments.

Module 5: Run a training script as a command job in Azure Machine Learning

Learn how to convert your code to a script and run it as a command job in Azure Machine Learning.

Learning objectives

In this module, you'll learn how to:

- Convert a notebook to a script.

- Test scripts in a terminal.

- Run a script as a command job.

- Use parameters in a command job.

Module 6: Track model training with MLflow in jobs

Learn how to track model training with MLflow in jobs when running scripts.

Learning objectives

In this module, you learn how to:

- Use MLflow when you run a script as a job.

- Review metrics, parameters, artifacts, and models from a run.

Module 7: Register an MLflow model in Azure Machine Learning

Learn how to log and register an MLflow model in Azure Machine Learning.

Learning objectives

In this module, you'll learn how to:

- Log models with MLflow.

- Understand the MLmodel format.

- Register an MLflow model in Azure Machine Learning.

Module 8: Deploy a model to a managed online endpoint

Learn how to deploy models to a managed online endpoint for real-time inferencing.

Learning objectives

In this module, you'll learn how to:

- Use managed online endpoints.

- Deploy your MLflow model to a managed online endpoint.

- Deploy a custom model to a managed online endpoint.

- Test online endpoints.

Take the assessment.

This assessment will use an interactive lab to evaluate your performance. It will take a few minutes to load the lab, and you may do other activities while it loads. After you launch the lab, you will need to wait 72 hours to launch it again. Your mouse movements and text entered during the lab will be recorded for quality purposes. Learn more

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