

## Designing and Implementing a Data Science Solution on Azure (4 Days)

### Overview

Learn how to operate machine learning solutions at cloud scale using Azure Machine Learning. This course teaches you to leverage your existing knowledge of Python and machine learning to manage data ingestion and preparation, model training and deployment, and machine learning solution monitoring with Azure Machine Learning and MLflow.

### Audience Profile

This course is designed for data scientists with existing knowledge of Python and machine learning frameworks like Scikit-Learn, PyTorch, and Tensorflow, who want to build and operate machine learning solutions in the cloud.

### Prerequisites

Before attending this course, students must have:

- Azure Fundamentals
- Understanding of data science including how to prepare data, train models, and evaluate competing models to select the best one.
- How to program in the Python programming language and use the Python libraries: pandas, scikit-learn, matplotlib, and seaborn.

### Course Outline

- Design a data ingestion strategy for machine learning projects
- Design a machine learning model training solution
- Design a model deployment solution
- Explore Azure Machine Learning workspace resources and assets
- Explore developer tools for workspace interaction
- Make data available in Azure Machine Learning
- Work with compute targets in Azure Machine Learning
- Work with environments in Azure Machine Learning
- Find the best classification model with Automated Machine Learning
- Track model training in Jupyter notebooks with MLflow
- Run a training script as a command job in Azure Machine Learning
- Track model training with MLflow in jobs
- Run pipelines in Azure Machine Learning
- Perform hyperparameter tuning with Azure Machine Learning
- Deploy a model to a managed online endpoint
- Deploy a model to a batch endpoint