# DP-604T00 : Implement a data science and machine learning solution for AI in Microsoft Fabric Training

Duration: **1 Day**

BILGINÇ IT Academy
info@bilginc.com
bilginc.com

The **DP-604T00 training course** is designed to develop practical skills in building and implementing data science and machine learning solutions with Microsoft Fabric.

The course covers the **end-to-end data science lifecycle**, from understanding and exploring data to preparing and transforming datasets for analysis.

Participants will learn how to train and evaluate machine learning models, monitor training metrics, and manage experiments using Microsoft Fabric capabilities. The course also provides practical knowledge of **model deployment and prediction generation**, enabling learners to apply trained models to their datasets.

## Prerequisites

Participants should have a basic understanding of**fundamental data concepts and terminology**.

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## What You Will Learn

- Understand the end-to-end **data science process**
- Train machine learning models using notebooks in Microsoft Fabric
- Monitor model training metrics through MLflow and experiments
- Load datasets and carry out initial data exploration
- Develop an understanding of different types of data distributions
- Understand missing data and apply effective strategies for managing it
- Explore and visualize data using different visualization techniques and libraries
- Discover **Data Wrangler** features and their role in the data science workflow
- Carry out various data preprocessing operations
- Manage missing values and apply data imputation strategies
- Apply **one-hot encoding** and other techniques to transform categorical data into a format compatible with machine learning algorithms
- Train machine learning models using open-source frameworks
- Monitor model training activities with MLflow and experiments within Microsoft Fabric
- Save trained models to a Microsoft Fabric workspace
- Prepare datasets for **batch predictions**
- Apply machine learning models to datasets to generate new predictions
- Store generated predictions in a Delta table

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## Training Outline

### 1. Introduction to End-to-End Analytics with Microsoft Fabric

Explore how Microsoft Fabric brings enterprise analytics capabilities together within a single platform. Understand how Microsoft Fabric works and discover how its features can support your organization's analytics requirements.

### 2. Getting Started with Data Science in Microsoft Fabric

Learn how data scientists can manage **data, notebooks, experiments, and machine learning models** within Microsoft Fabric. Discover how to access data across the organization and collaborate effectively with other data professionals.

### 3. Exploring Data for Data Science Using Microsoft Fabric Notebooks

Discover how Microsoft Fabric notebooks support comprehensive data exploration. Use notebook capabilities to identify hidden patterns and relationships within datasets and gain a better understanding of your data.

### 4. Preprocessing Data with Data Wrangler in Microsoft Fabric

Explore how **Data Wrangler** simplifies data preprocessing tasks. Learn to clean datasets, manage missing values, and transform data features to prepare them for machine learning model development.

### 5. Training and Tracking Machine Learning Models with MLflow in Microsoft Fabric

Train machine learning models using Microsoft Fabric notebooks, track training activities through experiments, and manage models with **MLflow**.

### 6. Generating Batch Predictions with a Deployed Model in Microsoft Fabric

Learn how to save and use machine learning models within Microsoft Fabric. Apply deployed models to generate **batch predictions** and enrich existing datasets with the resulting predictions.