

Azure MLOps Engineering: A Hands-On Blueprint from Data Pipelines to GenAI Ops

"Regular Price: \$297

Course Overview

This course covers the essentials of machine learning and how to leverage Azure's platform for building, deploying, and managing ML models. You'll learn about creating and managing the end-to-end lifecycle of ML models using Azure Machine Learning Studio and Azure AI Studio. You will understand the implementation of Generative AI. You'll explore advanced MLOps features for automating the ML lifecycle, GenAIOps and monitoring model performance.

Module One: Introduction to Azure Machine Learning

Learn the fundamentals of machine learning and Azure Machine Learning, including tools like the CLI, Python SDK v2, and AI Studio. Explore creating ML resources, managing data concepts, and working with datastores and connections. Gain insights into data preparation with Apache Spark and leverage the Managed Feature Store for enhanced ML workflows.

- i. **What is machine learning?**
- ii. **What is Azure Machine Learning?**
- iii. **Azure Machine Learning CLI & Python SDK v2**
- iv. **Creating ML resources and getting started with Azure Machine Learning**
- v. **Working with Data**
- vi. **Understanding Managed feature store**
- vii. **Interactive Simulated Lab Experience - Introduction**

Module Two: Automating and deploying Azure Machine Learning models

Master the end-to-end process of training, deploying, and monitoring machine learning models with Azure Machine Learning. Explore Automated Machine Learning (AutoML), MLflow integration, and the use of ML pipelines and components to streamline workflows and optimize model performance. Learn to deploy and monitor models efficiently, ensuring robust and scalable ML solutions.

- i. **Training models with Azure Machine Learning**

- ii. **Overview of Automated machine learning (AutoML)**
- iii. **Deploying Azure ML models**
- iv. **Monitoring models with Azure Machine Learning**
- v. **Prompt flow and LLMOps**
- vi. **Semantic Kernel**
- vii. **MLflow and Azure Machine Learning**

Module Three: Using Generative AI in Azure Machine Learning

Dive into advanced Azure Machine Learning features, including Model Catalog, Collections, and prompt flow for streamlined workflows. Explore Retrieval Augmented Generation and Vector Stores (preview) to enhance generative AI applications. Learn effective strategies for monitoring and optimizing models for robust AI solutions.

- i. **Working with Azure Machine Learning pipelines and components**
- ii. **Understanding Model Catalog and Collections**
- iii. **Overview of Azure Machine Learning prompt flow**
- iv. **Understanding Retrieval Augmented Generation (RAG) using Azure Machine Learning prompt flow (preview)**
- v. **Implementing Vector stores in Azure Machine Learning (preview)**
- vi. **Model monitoring for generative AI applications (preview)**

Module Four: Operationalize with MLOps

Master MLOps with Azure Machine Learning, including Git integration, Azure Pipelines, and GitHub Actions. Explore GenAIOps for LLM workflows, secure AI applications, and implement robust security and governance practices. Learn Responsible AI techniques, configure dashboards, and share insights with the Responsible AI scorecard (preview) for ethical and effective AI solutions.

- i. **Operationalize with MLOps**
- ii. **Introduction to Git integration for Azure Machine Learning**

- iii. **Using Azure Pipelines with Azure Machine Learning**
- iv. **Using GitHub Actions with Azure Machine Learning**
- v. **GenAIOps (LLMOps) for MLOps practitioners**
- vi. **Securing AI Applications on Azure**
- vii. **Responsible use of AI**

Final Stages: Post-training Skills Assessment

Take this assessment to validate your skills gathered from the self-paced online learning course completed in this course to mark your completion.