

AI-300T00-A: Operationalize Machine Learning and Generative AI Solutions



Duration: 4 days

Audience/Prerequisites: This course is intended for data scientists, machine learning engineers, and DevOps professionals who want to design and operate production-grade AI solutions on Azure. It is suited for learners with experience in Python, a foundational understanding of machine learning concepts, and basic familiarity with DevOps practices such as source control, CI/CD, and command-line tools, who are preparing to implement MLOps and GenAI Ops workflows using Azure-native services.

Description: This course prepares learners to design, implement, and operate Machine Learning Operations (MLOps) and Generative AI Operations (GenAI Ops) solutions on Azure. It covers building secure and scalable AI infrastructure, managing the full lifecycle of traditional machine learning models with Azure Machine Learning, and deploying, evaluating, monitoring, and optimizing generative AI applications and agents using Microsoft Foundry. Learners will gain hands-on knowledge of automation, continuous integration and delivery, infrastructure as code, and observability by using tools such as GitHub Actions, Azure CLI, and Bicep. The course emphasizes collaboration with data science and DevOps teams to deliver reliable, production-ready AI systems aligned with modern MLOps and GenAI Ops best practices.

OUTLINE:

MODULE 1: OPERATIONALIZE MACHINE LEARNING MODELS (MLOPS)

- Experiment with Azure Machine Learning
- Perform hyperparameter tuning with Azure Machine Learning
- Run pipelines in Azure Machine Learning
- Trigger Azure Machine Learning jobs with GitHub Actions
- Trigger GitHub Actions with feature-based development
- Work with environments in GitHub Actions
- Deploy a model with GitHub Actions

MODULE 2: OPERATIONALIZE GENERATIVE AI APPLICATIONS (GENAIOPS)

- Plan and prepare a GenAI Ops solution
- Manage prompts for agents in Microsoft Foundry with GitHub
- Evaluate and optimize AI agents through structured experiments
- Automate AI evaluations with Microsoft Foundry and GitHub Actions
- Monitor your generative AI application
- Analyze and debug your generative AI app with tracing