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Learning Style: Virtual Classroom

Technology: Amazon Web Services

Difficulty: Beginner

Course Duration: 3 Days

MLOps Engineering on AWS (AWS-MLPOPS)

About This Course:

This course builds upon and extends the DevOps methodology prevalent in software development to build, train, and deploy machine learning (ML) models. The course is based on the four-level MLOPs maturity framework. The course focuses on the first three levels, including the initial, repeatable, and reliable levels.

The course stresses the importance of data, model, and code to successful ML deployments. It demonstrates the use of tools, automation, processes, and teamwork in addressing the challenges associated with handoffs between data engineers, data scientists, software developers, and operations. The course also discusses the use of tools and processes to monitor and take action when the model prediction in production drifts from agreed-upon key performance indicators.

Course Objectives:

In this course, you will learn to:

- Explain the benefits of MLOps
- Compare and contrast DevOps and MLOps
- Evaluate the security and governance requirements for an ML use case and describe possible solutions and mitigation strategies
- Set up experimentation environments for MLOps with Amazon SageMaker
- Explain best practices for versioning and maintaining the integrity of ML model assets (data, model, and code)
- Describe three options for creating a full CI/CD pipeline in an ML context
- Recall best practices for implementing automated packaging, testing and deployment. (Data/model/code)
- Demonstrate how to monitor ML based solutions
- Demonstrate how to automate an ML solution that tests, packages, and deploys a model in an automated fashion; detects performance degradation; and re-trains the model on top of newly acquired data

Audience:

- DevOps engineers
- ML engineers
- Developers/operations with responsibility for operationalizing ML models

Prerequisites:

- AWS Technical Essentials
- DevOps Engineering on AWS

- Practical Data Science with Amazon SageMaker

Course Outline:

- Module 1: Introduction of MLOps
- Module 2: Initial MLOps: Experimentation Environments in SageMaker Studio
- Module 3: Repeatable MLOps: Repositories
- Module 4: Repeatable MLOps: Orchestration
- Module 5: Reliable MLOps: Scaling and Testing
- Module 6: Reliable MLOps: Monitoring