

MLOps Engineering on AWS



Przeznaczenie szkolenia

This course is intended for any one of the following roles with responsibility for productionizing machine learning models in the AWS Cloud:

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



Korzyści wynikające z ukończenia szkolenia

In this course, you will learn to:

- Describe machine learning operations
- Understand the key differences between DevOps and MLOps
- Describe the machine learning workflow
- Discuss the importance of communications in MLOps
- Explain end-to-end options for automation of ML workflows
- List key Amazon SageMaker features for MLOps automation
- Build an automated ML process that builds, trains, tests, and deploys models
- Build an automated ML process that retrains the model based on change(s) to the model code
- Identify elements and important steps in the deployment process
- Describe items that might be included in a model package, and their use in training or inference
- Recognize Amazon SageMaker options for selecting models for deployment, including support for
- ML frameworks and built-in algorithms or bring-your-own-models
- Differentiate scaling in machine learning from scaling in other applications
- Determine when to use different approaches to inference
- Discuss deployment strategies, benefits, challenges, and typical use cases
- Describe the challenges when deploying machine learning to edge devices
- Recognize important Amazon SageMaker features that are relevant to deployment and inference

- Describe why monitoring is important
- Detect data drifts in the underlying input data
- Demonstrate how to monitor ML models for bias
- Explain how to monitor model resource consumption and latency
- Discuss how to integrate human-in-the-loop reviews of model results in production



Oczekiwane przygotowanie słuchaczy

Required

- AWS Technical Essentials course (classroom or digital)
- DevOps Engineering on AWS course, or equivalent experience
- Practical Data Science with Amazon SageMaker course, or equivalent experience

Recommended

- The Elements of Data Science (digital course), or equivalent experience
- Machine Learning Terminology and Process (digital course)



Język szkolenia

- Course: polish



Czas trwania

3 dni / 24 godzin

Agenda szkolenia

Day 1

Module 0: Welcome

- Course introduction

Module 1: Introduction to MLOps

- Machine learning operations
- Goals of MLOps

- Communication
- From DevOps to MLOps
- ML workflow
- Scope
- MLOps view of ML workflow
- MLOps cases

Module 2: MLOps Development

- Intro to build, train, and evaluate machine learning models
- MLOps security
- Automating
- Apache Airflow
- Kubernetes integration for MLOps
- Amazon SageMaker for MLOps
- Lab: Bring your own algorithm to an MLOps pipeline
- Demonstration: Amazon SageMaker
- Intro to build, train, and evaluate machine learning models
- Lab: Code and serve your ML model with AWS CodeBuild
- Activity: MLOps Action Plan Workbook

Day 2

Module 3: MLOps Deployment

- Introduction to deployment operations
- Model packaging
- Inference
- Lab: Deploy your model to production
- SageMaker production variants
- Deployment strategies
- Deploying to the edge
- Lab: Conduct A/B testing
- Activity: MLOps Action Plan Workbook

Day 3

Module 4: Model Monitoring and Operations

- Lab: Troubleshoot your pipeline
- The importance of monitoring
- Monitoring by design
- Lab: Monitor your ML model
- Human-in-the-loop
- Amazon SageMaker Model Monitor
- Demonstration: Amazon SageMaker Pipelines, Model Monitor, model registry, and Feature Store
- Solving the Problem(s)
- Activity: MLOps Action Plan Workbook

Module 5: Wrap-up

- Course review
- Activity: MLOps Action Plan Workbook
- Wrap-up