

## Szkolenie: AWS Amazon SageMaker Studio for Data Scientists



### Cel szkolenia:

Amazon SageMaker Studio helps data scientists prepare, build, train, deploy, and monitor machine learning (ML) models quickly by bringing together a broad set of capabilities purpose-built for ML. This course prepares experienced data scientists to use the tools that are part of SageMaker Studio to improve productivity at every step of the ML lifecycle.

### Course objectives

In this course, you will learn to:

- Accelerate the preparation, building, training, deployment, and monitoring of ML solutions by using Amazon SageMaker Studio.

### Intended audience

This course is intended for:

- Experienced data scientists who are proficient in ML and deep learning fundamentals. Relevant experience includes using ML frameworks, Python programming, and the process of building, training, tuning, and deploying models.

### Plan szkolenia:

- Module 1: Amazon SageMaker Setup and Navigation
  - Launch SageMaker Studio from the AWS Service Catalog.
  - Navigate the SageMaker Studio UI.
  - Demo 1: SageMaker UI Walkthrough
  - Lab 1: Launch SageMaker Studio from AWS Service Catalog
- Module 2: Data Processing
  - Use Amazon SageMaker Studio to collect, clean, visualize, analyze, and transform data.
  - Set up a repeatable process for data processing.
  - Use SageMaker to validate that collected data is ML ready.
  - Detect bias in collected data and estimate baseline model accuracy.
  - Lab 2: Analyze and Prepare Data Using SageMaker Data Wrangler

- Lab 3: Analyze and Prepare Data at Scale Using Amazon EMR
- Lab 4: Data Processing Using SageMaker Processing and the SageMaker Python SDK
- Lab 5: Feature Engineering Using SageMaker Feature Store
- Module 3: Model Development
  - Use Amazon SageMaker Studio to develop, tune, and evaluate an ML model against business objectives and fairness and explainability best practices.
  - Fine-tune ML models using automatic hyperparameter optimization capability.
  - Use SageMaker Debugger to surface issues during model development.
  - Demo 2: Autopilot
  - Lab 6: Track Iterations of Training and Tuning Models Using SageMaker Experiments
  - Lab 7: Analyze, Detect, and Set Alerts Using SageMaker Debugger
  - Lab 8: Identify Bias Using SageMaker Clarify
- Module 4: Deployment and Inference
  - Use Model Registry to create a model group; register, view, and manage model versions; modify model approval status; and deploy a model.
  - Design and implement a deployment solution that meets inference use case requirements.
  - Create, automate, and manage end-to-end ML workflows using Amazon SageMaker Pipelines.
  - Lab 9: Inferencing with SageMaker Studio
  - Lab 10: Using SageMaker Pipelines and the SageMaker Model Registry with SageMaker Studio
- Module 5: Monitoring
  - Configure a SageMaker Model Monitor solution to detect issues and initiate alerts for changes in data quality, model quality, bias drift, and feature attribution (explainability) drift.
  - Create a monitoring schedule with a predefined interval.
  - Demo 3: Model Monitoring
- Module 6: Managing SageMaker Studio Resources and Updates
  - List resources that accrue charges.
  - Recall when to shut down instances.
  - Explain how to shut down instances, notebooks, terminals, and kernels.
  - Understand the process to update SageMaker Studio.
- Capstone
  - The Capstone lab will bring together the various capabilities of SageMaker Studio discussed in this course. Students will be given the opportunity to prepare, build, train, and deploy a model using a tabular dataset not seen in earlier labs. Students can choose among basic, intermediate, and advanced versions of the instructions.
  - Capstone Lab: Build an End-to-End Tabular Data ML Project Using SageMaker Studio and

## the SageMaker Python SDK

### Wymagania:

We recommend that all students complete the following AWS course prior to attending this course:

- AWS Tech Essentials (1-day AWS instructor led course or 4-hour digital course)

We recommend students who are not experienced data scientists complete the following two courses followed by 1-year on-the-job experience building models prior to taking this course:

- The Machine Learning Pipeline on AWS (4-day AWS instructor led course)
- Deep Learning on AWS (1-day AWS instructor led course)

### Poziom trudności



### Certyfikaty:

The participants will obtain certificates signed by AWS (course completion).

### Prowadzący:

AWS Authorized Instructor (AAI)