

## Amazon SageMaker Studio for Data Scientists

**Duration: 3 Days**    **Course Code: GK110001**    **Delivery Method: Virtual Classroom**

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### Overview:

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

### Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

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### Target Audience:

Experienced data scientists who are proficient in ML and deep learning fundamentals

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### Objectives:

- In this course, you will learn to:
  - Accelerate the process to prepare, build, train, deploy, and monitor ML solutions using Amazon SageMaker Studio
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### Prerequisites:

We recommend that all attendees of this course have:

- Experience using ML frameworks
  - Python programming experience
  - At least 1 year of experience as a data scientist responsible for training, tuning, and deploying models
  - AWS Technical Essentials
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## Content:

### Day 1

#### Module 1: Amazon SageMaker Studio Setup

- JupyterLab Extensions in SageMaker Studio
- Demonstration: SageMaker user interface demo

#### Module 2: Data Processing

- Using SageMaker Data Wrangler for data processing
- Hands-On Lab: Analyze and prepare data using Amazon SageMaker Data Wrangler
- Using Amazon EMR
- Using AWS Glue interactive sessions
- Using SageMaker Processing with custom scripts

#### Module 3: Model Development

- SageMaker training jobs
- Built-in algorithms
- Bring your own script
- Bring your own container
- SageMaker Experiments

### Day 2

#### Module 3: Model Development (continued)

- SageMaker Debugger
- Hands-On Lab: Analyzing, Detecting, and Setting Alerts Using SageMaker Debugger
- Automatic model tuning
- SageMaker Autopilot: Automated ML
- Demonstration: SageMaker Autopilot
- Bias detection
- SageMaker Jumpstart

#### Module 4: Deployment and Inference

- SageMaker Model Registry
- SageMaker Pipelines
- SageMaker model inference options
- Scaling
- Testing strategies, performance, and optimization

#### Module 5: Monitoring

- Amazon SageMaker Model Monitor
- Discussion: Case study
- Demonstration: Model Monitoring

### Day 3

#### Module 6: Managing SageMaker Studio Resources and Updates

- Accrued cost and shutting down
- Updates

### Capstone

#### Environment setup

- Challenge 1: Analyze and prepare the dataset with SageMaker Data Wrangler
- Challenge 2: Create feature groups in SageMaker Feature Store
- Challenge 3: Perform and manage model training and tuning using SageMaker Experiments
- (Optional) Challenge 4: Use SageMaker Debugger for training performance and model optimization
- Challenge 5: Evaluate the model for bias using SageMaker Clarify
- Challenge 6: Perform batch predictions using model endpoint
- (Optional) Challenge 7: Automate full model development process using SageMaker Pipeline

#### Lab Outlines

- Hands-On Lab: Data processing using Amazon SageMaker Processing and SageMaker Python SDK
- SageMaker Feature Store
- Hands-On Lab: Feature engineering using SageMaker Feature Store
- Hands-On Lab: Analyze and prepare data at scale using Amazon EMR
- Hands-On Lab: Using SageMaker Experiments to Track Iterations of Training and Tuning Models
- Hands-On Lab: Using SageMaker Clarify for Bias and Explainability
- Hands-On Lab: Using SageMaker Pipelines and SageMaker Model Registry with SageMaker Studio
- Hands-On Lab: Inferencing with SageMaker Studio

## Further Information:

For More information, or to book your course, please call us on 00 966 92000 9278

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