The Machine Learning Pipeline on AWS – Intensive Training («AWSA07»)

This course prepares you to get certified on 'AWS Certified Machine Learning (Specialty Level)'. You will explore how to use the machine learning (ML) pipeline to solve a real business problem in a project-based learning environment.

Duration: 4 days
Price: 3'700.–
Course documents: Digital original AWS courseware

Content

Participants learn about each phase of the pipeline through presentations and demonstrations by the trainers and apply this knowledge to implement a project to solve one of three business problems: fraud detection, recommendation engines, or flight delays.
By the end of the course, students will have successfully built, trained, evaluated, tuned, and deployed an ML model using Amazon SageMaker that solves their selected business problem.

Day One
Module 0: Introduction

- Pre-assessment

Module 1: Introduction to Machine Learning and the ML Pipeline

- Overview of machine learning, including use cases, types of machine learning, and key concepts
- Overview of the ML pipeline
- Introduction to course projects and approach

Module 2: Introduction to Amazon SageMaker

- Introduction to Amazon SageMaker
- Demo: Amazon SageMaker and Jupyter notebooks
- Hands-on: Amazon SageMaker and Jupyter notebooks

Module 3: Problem Formulation

- Overview of problem formulation and deciding if ML is the right solution
- Converting a business problem into an ML problem
- Demo: Amazon SageMaker Ground Truth
- Hands-on: Amazon SageMaker Ground Truth
- Practice problem formulation
- Formulate problems for projects

Day Two

Checkpoint 1 and Answer Review
Module 4: Preprocessing

- Overview of data collection and integration, and techniques for data preprocessing and visualization
- Practice preprocessing
- Preprocess project data
- Class discussion about projects

Checkpoint 2 and Answer Review
Module 5: Model Training

- Choosing the right algorithm
- Formatting and splitting your data for training
- Loss functions and gradient descent for improving your model
- Demo: Create a training job in Amazon SageMaker

Module 6: Model Evaluation

- How to evaluate classification models
- How to evaluate regression models
- Practice model training and evaluation
- Train and evaluate project models
- Initial project presentations

Day Four

Checkpoint 3 and Answer Review
Module 7: Feature Engineering and Model Tuning

- Feature extraction, selection, creation, and transformation
- Hyperparameter tuning
- Demo: SageMaker hyperparameter optimization
- Practice feature engineering and model tuning
- Apply feature engineering and model tuning to projects
- Final project presentations

Module 8: Deployment

- How to deploy, inference, and monitor your model on Amazon SageMaker
- Deploying ML at the edge
- Demo: Creating an Amazon SageMaker endpoint
- Post-assessment
- Course wrap-up

Key Learnings

- Selecting and justifying the appropriate ML approach for a given business problem
- Using the ML pipeline to solve a specific business problem
- Training, evaluating, deploying, and tuning an ML model using Amazon SageMaker
- Describing some of the best practices for designing scalable, cost-optimized, and secure ML pipelines in AWS
- Applying machine learning to a real-life business problem after the course is complete

Target audience

This course is intended for the following job roles:

- Machine Learning & AI

Requirements

We recommend that attendees of this course have the following prerequisites:

- Basic knowledge of Python programming language
- Basic understanding of AWS Cloud infrastructure (Amazon S3 and Amazon CloudWatch)
- Basic experience working in a Jupyter notebook environment

and have attended the following course (or equivalent knowlege):

- Introduction to Programming with Python («PYTHON»)
- AWS Cloud Practitioner Essentials – Intensive Training («AWSE03»)

Certification

This course is **NOT** intended to prepare students for the certification *AWS Certified Solutions Architect – Associate*.

This course can be used as preparation for the following official **AWS Certification:** AWS Certified Machine Learning – Specialty

Further courses

- MLOps Engineering on AWS – Intensive Training («AWSS07»)

Any questions?

We are happy to advise you on +41 44 447 21 21 or info@digicomp.ch. You can find detailed information about dates on www.digicomp.ch/courses-digital-transformation-technologies/artificial-intelligence-ai/course-the-machine-learning-pipeline-on-aws-intensive-training