Machine Learning Engineer Associate on AWS

Course Overview

This training is designed to prepare learners for the AWS Certified Machine Learning – Engineer Associate exam. It focuses on developing end-to-end ML solutions on AWS. Learners will explore problem framing, data engineering, model training and evaluation, deployment, monitoring, and optimization. Through hands-on labs, real-world scenarios, and exam-focused guidance, students will gain practical ML skills and a thorough understanding of AWS services like SageMaker, S3, Glue, and CloudWatch.

Key Features

- **Comprehensive Coverage**
  Covers the full ML lifecycle — from data preparation to model monitoring on AWS.
- **Hands-On Labs**
  Gain practical experience through labs focused on SageMaker, feature engineering, model training, tuning, and deployment.
- **Real-World Scenarios**
  Learn through practical use cases such as fraud detection, sentiment analysis, and recommendation systems.
- **Certification Preparation**
  Includes practice questions, exam tips, and strategies to help you confidently prepare for the AWS ML certification exam.

- **Performance Optimization**

  Discover techniques for deploying machine learning models in a cost-effective and low-latency manner on AWS.
- **CI/CD for ML**

  Implement MLOps by integrating SageMaker Pipelines with AWS CodePipeline to automate the ML workflow.

Who Should Attend?

- Machine Learning Engineers
- Data Scientists
- DevOps Engineers working on ML workloads
- Software Developers with ML responsibilities

Prerequisites

- Familiarity with basic machine learning concepts
- Working knowledge of Python programming language and common data science libraries such as NumPy, Pandas, and Scikit-learn
- Basic understanding of cloud computing concepts and familiarity with AWS
- Experience with version control systems such as Git (beneficial but not required)

Course Modules

Module 1 Introduction to Machine Learning (ML) on AWS

- Topic A: Introduction to ML
- Topic B: Amazon SageMaker AI
- Topic C: Responsible ML

Module 2 Analyzing Machine Learning (ML) Challenges

- Topic A: Evaluating ML business challenges
- Topic B: ML training approaches
- Topic C: ML training algorithms

Module 3 Data Processing for Machine Learning (ML)

- Topic A: Data preparation and types
- Topic B: Exploratory data analysis
- Topic C: AWS storage options and choosing storage

Module 4 Data Transformation and Feature Engineering

- Topic A: Handling incorrect, duplicated, and missing data
- Topic B: Feature engineering concepts
- Topic C: Feature selection techniques
- Topic D: AWS data transformation services
- Lab 1: Analyze and Prepare Data with Amazon SageMaker Data Wrangler and Amazon EMR
- Lab 2: Data Processing Using SageMaker Processing and the SageMaker Python SDK

Module 5 Choosing a Modeling Approach

- Topic A: Amazon SageMaker AI built-in algorithms
- Topic B: Selecting built-in training algorithms
- Topic C: Amazon SageMaker Autopilot
- Topic D: Model selection consideration
- Topic E: ML cost considerations

Module 6 Training Machine Learning (ML) Models

- Topic A: Model training concepts
- Topic B: Training models in Amazon SageMaker AI
- Lab 3: Training a model with Amazon SageMaker AI

Module 7 Evaluating and Tuning Machine Learning (ML) models

- Topic A: Evaluating model performance
- Topic B: Techniques to reduce training time Topic C: Hyperparameter tuning techniques
- Lab 4: Model Tuning and Hyperparameter Optimization with Amazon SageMaker AI

Module 8 Model Deployment Strategies

- Topic A: Deployment considerations and target options
- Topic B: Deployment strategies
- Topic C: Choosing a model inference strategy
- Topic D: Container and instance types for inference
- Lab 5: Shifting Traffic A/B

Module 9 Securing AWS Machine Learning (ML) Resources

- Topic A: Access control
- Topic B: Network access controls for ML resources
- Topic C: Security considerations for CI/CD pipelines

Module 10 Machine Learning Operations (MLOps) and Automated Deployment

- Topic A: Introduction to MLOps
- Topic B: Automating testing in CI/CD pipelines
- Topic C: Continuous delivery services
- Lab 6: Using Amazon SageMaker Pipelines and the Amazon SageMaker Model Registry with Amazon SageMaker Studio

Module 11 Monitoring Model Performance and Data Quality

- Topic A: Detecting drift in ML models
- Topic B: SageMaker Model Monitor
- Topic C: Monitoring for data quality and model quality Topic D: Automated remediation and troubleshooting Lab
- Lab 7: Monitoring a Model for Data Drift

About CloudThat

Founded in 2012, CloudThat is an award-winning company and the first in India to offer cloud training and consulting services for mid-market and enterprise clients worldwide. Recently, it became the first Indian company to win consecutive AWS Training Partner of the Year (APJ) Awards and the Microsoft Training Services Partner of the Year Award. These achievements represent its 11th award in 8 years. Notably, 20 of CloudThat's Microsoft trainers feature in Microsoft's Top 100 MCTs Global List for 2025, underscoring its global excellence in training.

A pioneer in the cloud domain, CloudThat specializes in Cloud Migration, Data Platforms, DevOps, IoT, and cutting-edge technologies like Gen AI & AI/ML. As a Microsoft Solutions Partner, AWS Advanced Tier Training Partner, and Google Cloud Platform Partner, CloudThat has trained 850k+ professionals across 600+ cloud certifications and supported 500+ consulting projects for 250+ corporates in 30+ countries. These achievements highlight CloudThat's commitment to empowering professionals to advance their skills and careers

Our Success Track

13+ Years of Experience	**200+** Corporates served	**30+** countries catered
850K+ Professionals trained	**500+** Projects delivered	**600+** Cloud certifications

To know more about our cloud certification training, email at **sales@cloudthat.com** or call us at **+918880002200.**