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Azure DP?100 Training - Designing and Implementing a Data Science Solution

ALL-IN-ONE: EXAM INCLUDED IN PRICE

4 days (28 hours)

Presentation

Immerse yourself in the world of machine learning in the cloud with our training course dedicated to Azure DP-100. All the stages of a data science project on Azure, from data preparation to inference of deployed models. This structured course prepares you to take the official Microsoft DP-100 exam and implement your own ML solutions on Azure Machine Learning.

You'll start by getting to grips with the Azure ML environment, organizing the workspace and using the Python v2 SDK. You'll learn how to structure your data, create versioned datasets, and perform efficient exploration to initiate your experiments.

Then you'll get to the heart of model training, from AutoML solutions to custom pipelines. You'll learn how to orchestrate reusable machine learning workflows, track metrics, and save your models professionally.

The training continues with the deployment, consumption and supervision of ML models, via managed endpoints. You'll also learn about MLOps best practices: alerts, drifts, updating and automated retraining.

As with all our training courses, this one will be presented with the latest updates for DP-100 certification.

Objectives

- Describe the complete cycle of a machine learning project on Azure, from raw data to deployed model

- Connect to various sources and prepare data via DataAssets and automated transformations
- Explore, clean and structure data to create a reliable, reusable training set
- Train models with AutoML or custom scripts via the Python v2 SDK
- Design machine learning pipelines to automate and orchestrate ML workflow steps
- Deploy models on secure endpoints, then test and monitor inferences in production
- Integrate language models (LLM) via Azure OpenAI and prepare effectively for the DP-100 exam.

Target audience

- Data engineers
- Data analysts
- Data Scientists

PREREQUISITES

- Basic knowledge of machine learning

Our Azure DP?100 training program

Introduction to Azure Machine Learning

- DP?100 certification objectives
- Roles and missions of a Data Scientist in Azure
- Presentation of key components: workspace, compute, datastore, dataset
- Overview of Azure ML Studio and the Python v2 SDK
- Creating and configuring a development environment

Managing data in Azure ML

- Accessing data sources
- Creating and versioning DataAssets
- Loading, cleansing and transforming data
- Using pandas, seaborn, matplotlib for EDA
- Saving and sharing data in the workspace

Using AutoML in Azure

- Basic AutoML concepts
- Creating AutoML experiments
- Configuration and execution via SDK v2

- Selecting the best model and analyzing results
- Rapid deployment from an AutoML run

Training customized models

- Structure of a training script
- Job configuration with Command via SDK
- Creating and managing compute clusters
- Parameter passing, logging and metrics collection
- Visualizing and comparing runs

Machine Learning pipelines

- Introduction to ML pipelines and components
- Building a pipeline with @pipeline and PipelineJob
- Orchestrating steps: ingestion ? transformation ? training
- Data passage and reusability
- Pipeline execution, tracking and versioning

Model registration and management

- SDK-based model backup
- Azure model registry: versioning and sharing
- Compare performance and metrics between models
- Exporting and reloading models in a pipeline

Model deployment and inference

- Deployment on a managed endpoint (online vs. batch)
- Building the environment
- Inference tests with REST API and SDK
- Deployed model monitoring
- Model update, rollback and decommissioning

MLOps, supervision and automatic retraining

- Integration with Azure DevOps and GitHub Actions
- Drift monitoring
- Automatic detection and alerts
- Automated retraining loop
- MLOps best practices with Azure Machine Learning

Generative AI and preparation for the DP-100 exam

- Introduction to LLMs with Azure OpenAI
- Language model integration
- RAG concepts
- Model fine-tuning with Azure ML
- Exam tips: format, question types, time management
- Mock exam and final review checklist

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced IT technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the forthcoming course, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Certification

A certificate will be awarded to each trainee who has completed the entire course.