Microsoft Azure Data Scientist Associate – Flexible Training («DP100V»)

This DP-100 training consists of a maximum of 2 half-day sessions per week for a maximum of 4 weeks with integrated learning support. Click «Timetable» for the session plan at the bottom of the page where you select your desired date.

Duration: 3 days
Price: 2'550.–
Course documents: Official Microsoft Courseware and Microsoft Learn
Vendor code: DP-100

Content

The content of this flexible training is derived from the exam «DP-100: Designing and Implementing a Data Science Solution on Azure». Start preparing for the course on Microsoft Learn now and use the Learning Support if you have any questions. During the 3h instructor sessions you will work with the official Microsoft course material (more information under «Methodology & didactics»).

Module 1: Introduction to Azure Machine Learning

In this module, you will learn how to provision an Azure Machine Learning workspace and use it to manage machine learning assets such as data, compute, model training code, logged metrics, and trained models. You will learn how to use the web-based Azure Machine Learning studio interface as well as the Azure Machine Learning SDK and developer tools like Visual Studio Code and Jupyter Notebooks to work with the assets in your workspace.

Lessons

- Getting Started with Azure Machine Learning
- Azure Machine Learning Tools

Lab : Creating an Azure Machine Learning Workspace
Lab : Working with Azure Machine Learning Tools

Module 2: No-Code Machine Learning with Designer

This module introduces the Designer tool, a drag and drop interface for creating machine learning models without writing any code. You will learn how to create a training pipeline that encapsulates data preparation and model training, and then convert that training pipeline to an inference pipeline that can be used to predict values from new data, before finally deploying the inference pipeline as a service for client applications to consume.
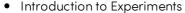
Lessons

- Training Models with Designer
- Publishing Models with Designer

Lab : Creating a Training Pipeline with the Azure ML Designer
Lab : Deploying a Service with the Azure ML Designer

Module 3: Running Experiments and Training Models

In this module, you will get started with experiments that encapsulate data processing and model training code, and use them to train machine learning models.

Lessons

- Introduction to Experiments
- Training and Registering Models

Lab : Running Experiments
Lab : Training and Registering Models

Module 4: Working with Data

Data is a fundamental element in any machine learning workload, so in this module, you will learn how to create and manage datastores and datasets in an Azure Machine Learning workspace, and how to use them in model training experiments.

Lessons

- Working with Datastores
- Working with Datasets

Lab : Working with Datastores
Lab : Working with Datasets

Module 5: Compute Contexts

One of the key benefits of the cloud is the ability to leverage compute resources on demand, and use them to scale machine learning processes to an extent that would be infeasible on your own hardware. In this module, you will learn how to manage experiment environments that ensure consistent runtime consistency for experiments, and how to create and use compute targets for experiment runs.

Lessons

- Working with Environments
- Working with Compute Targets

Lab : Working with Environments
Lab : Working with Compute Targets

Module 6: Orchestrating Operations with Pipelines

Now that you understand the basics of running workloads as experiments that leverage data assets and compute resources, it's time to learn how to orchestrate these workloads as pipelines of connected steps. Pipelines are key to implementing an effective Machine Learning Operationalization (ML Ops) solution in Azure, so you'll explore how to define and run them in this module.

Lessons

- Introduction to Pipelines
- Publishing and Running Pipelines

Lab : Creating a Pipeline
Lab : Publishing a Pipeline

Module 7: Deploying and Consuming Models

Models are designed to help decision making through predictions, so they're only useful when deployed and available for an application to consume. In this module learn how to deploy models for real-time inferencing, and for batch inferencing.

Lessons

- Real-time Inferencing
- Batch Inferencing

Module 8: Training Optimal Models

By this stage of the course, you've learned the end-to-end process for training, deploying, and consuming machine learning models; but how do you ensure your model produces the best predictive outputs for your data? In this module, you'll explore how you can use hyperparameter tuning and automated machine learning to take advantage of cloud-scale compute and find the best model for your data.

Lessons

- Hyperparameter Tuning
- Automated Machine Learning

Lab : Tuning Hyperparameters
Lab : Using Automated Machine Learning

Module 9: Interpreting Models

Many of the decisions made by organizations and automated systems today are based on predictions made by machine learning models. It's increasingly important to be able to understand the factors that influence the predictions made by a model, and to be able to determine any unintended biases in the model's behavior. This module describes how you can interpret models to explain how feature importance determines their predictions.

Lessons

- Introduction to Model Interpretation
- Using Model Explainers

Lab : Reviewing Automated Machine Learning Explanations
Lab : Interpreting Models

Module 10: Monitoring Models

After a model has been deployed, it's important to understand how the model is being used in production, and to detect any degradation in its effectiveness due to data drift. This module describes techniques for monitoring models and their data.

Lessons

- Monitoring Models with Application Insights
- Monitoring Data Drift

Lab : Monitoring a Model with Application Insights
Lab : Monitoring Data Drift

Key Learnings

- Selecting and setting up a development environment
- Quantifying the business problem
- Transforming data into usable datasets
- Performing Exploratory Data Analysis (EDA)
- Cleansing and transform data
- Performing feature extraction and selection
- Selecting an algorithmic approach
- Splitting datasets
- Identifying data imbalances
- Training the model
- Evaluating model performance

Methodology & didactics

Digicomp flexible learning approach:

- **Training modality:** As soon as you book the training, the individual preparation with Microsoft Learn and our Learning Support starts. During a period of 4 weeks, 6-8 half-day (3h each) virtual live sessions with our Azure MCT experts will take place. The sessions are already planned and can be easily combined with the daily work routine. Between the sessions there is enough time to process the learned knowledge.
- **Learning Support:** By means of forums, you have the opportunity to ask questions at any time and within a few hours you will receive a solution that will help you get ahead. Your access will be maintained until 30 days after completion of the official training to ensure a sustainable learning experience.
- **Detailed Session Plan:** Click «**Timetable**» at the bottom of the page where you select your desired date.

Target audience

Participants apply scientific rigor and data exploration techniques to gain actionable insights and communicate results to stakeholders. They use machine learning techniques to train, evaluate, and deploy models to build AI solutions that satisfy business objectives. Furthermore, they use applications that involve natural language processing, speech, computer vision, and predictive analytics.

Students serve as part of a multi-disciplinary team that incorporates ethical, privacy, and governance considerations into the solution.

Certification

This flexible training prepares you for:

- **Exam:** «DP-100: Designing and Implementing a Data Science Solution on Azure» for the
- **Certification:** «Microsoft Certified: Azure Data Scientist Associate»

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-microsoft-technology/microsoft-azure/microsoft-certified-azure-data-engineer-associate/course-microsoft-azure-data-scientist-associate-flexible-training-dp-100