

Perform Cloud Data Science with Azure Machine Learning

The main purpose of the course is to give participants the ability to analyze and present data by using Azure Machine Learning, and to provide an introduction to the use of machine learning with big data tools such as HDInsight and R Services

Who Should Attend

This primary audience for this course is people who wish to analyze and present data by using Azure Machine Learning. The secondary audience is IT professionals, Developers, and information workers who need to support solutions based on Azure machine learning.

Course Prerequisites

Before attending this course, participants should have:

- > Programming experience using R, and familiarity with common R packages
- > Knowledge of common statistical methods and data analysis best practice
- > Basic knowledge of the Microsoft Windows operating system and its core functionality
- > Working knowledge of relational databases



Gold Data Analytics
Gold Data Platform
Silver Cloud Platform
Silver Learning

Course Objectives

After completing this course, participants will be able to, among other things:

- > Explain machine learning, & how algorithms & languages are used
- > Describe the purpose of Azure Machine Learning, & list the main features of Azure Machine Learning Studio
- > Explore & use feature engineering & selection techniques on datasets that are to be used with Azure Machine Learning
- > Explore & use regression algorithms & neural networks with Azure Machine Learning
- > Explore & use classification & clustering algorithms with Azure Machine Learning
- > Use R & Python with Azure Machine Learning, & choose when to use a particular language
- > Explore & use hyperparameters, multiple algorithms, models, be able to score & evaluate models
- > Explore how to provide end-users with Azure Machine Learning services, & how to share data generated from Azure Machine Learning models
- > Explore & use the Cognitive Services APIs for text & image processing, to create a recommendation application, & describe the use of neural networks with Azure Machine Learning
- > Explore & use HDInsight with Azure Machine Learning

Course Code: 20774a
Course Duration: 5 Days
SATV: Yes

Course Summary

- Module 1:** Introduction to Machine Learning
- Module 2:** Introduction to Azure Machine Learning
- Module 3:** Managing Datasets
- Module 4:** Preparing Data for use with Azure Machine Learning
- Module 5:** Using Feature Engineering & Selection
- Module 6:** Building Azure Machine Learning Models
- Module 7:** Using Classification & Clustering with Azure Machine Learning Models
- Module 8:** Using R & Python with Azure Machine Learning
- Module 9:** Initializing & Optimising Machine Learning Models
- Module 10:** Using Azure Machine Learning Models
- Module 11:** Using Cognitive Services
- Module 12:** Using Machine Learning with HDInsight
- Module 13:** Using R Services with Machine Learning
- Module 14:** Consuming Data in a Data Warehouse

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Course Outline

Module 1: Introduction to Machine Learning

This module introduces machine learning and discussed how algorithms and languages are used

- > What is machine learning
- > Introduction to machine learning algorithms
- > Introduction to machine learning languages

Module 2: Introduction to Azure Machine Learning

This module describes the purpose of Azure Machine Learning, and list the main features of Azure Machine Learning Studio.

- > Azure machine learning overview
- > Introduction to Azure machine learning studio
- > Developing & hosting Azure machine learning applications

Module 3: Managing Datasets

At the end of this module the participant will be able to upload & explore various types of data in Azure machine learning

- > Categorizing your data
- > Importing data to Azure machine learning
- > Exploring & transforming data in Azure machine learning

Module 4: Preparing Data for use with Azure Machine Learning

This module provides techniques to prepare datasets for use with Azure machine learning

- > Data pre-processing
- > Handling incomplete datasets

Module 5: Using Feature Engineering & Selection

This module describes how to explore and use feature engineering and selection techniques on datasets that are to be used with Azure machine learning

- > Using feature engineering
- > Using feature selection

Module 6: Building Azure Machine Learning Models

This module describes how to use regression algorithms and neural networks with Azure machine learning.

- > Azure machine learning workflows
- > Scoring & evaluating models
- > Using regression algorithms
- > Using neural networks

Module 7: Using Classification & Clustering with Azure machine learning models

This module describes how to use classification and clustering algorithms with Azure machine learning.

- > Using classification algorithms
- > Clustering techniques
- > Selecting algorithms

Module 8: Using R and Python with Azure Machine Learning

This module describes how to use R and Python with azure machine learning and choose when to use a particular language

- > Using R
- > Using Python
- > Incorporating R & Python into Machine Learning experiments

Module 9: Initializing and Optimizing Machine Learning Models

This module describes how to use hyper-parameters and multiple algorithms and models, and be able to score and evaluate models.

- > Using hyper-parameters
- > Using multiple algorithms & models
- > Scoring & evaluating models

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Module 10: Using Azure Machine Learning Models

This module explores how to provide end users with Azure machine learning services, and how to share data generated from Azure machine learning models

- > Deploying & publishing models
- > Consuming Experiments

Module 11: Using Cognitive Services

This module introduces the cognitive services APIs for text and image processing to create a recommendation application, and describes the use of neural networks with Azure machine learning

- > Cognitive services overview
- > Processing language
- > Processing images & video
- > Recommending products

Module 12: Using Machine Learning with HDInsight

This module describes how use HDInsight with Azure machine learning.

- > Introduction to HDInsight
- > HDInsight cluster types
- > HDInsight & machine learning models

Module 13: Using R Services with Machine Learning

This module describes how to use R and R server with Azure machine learning, and explain how to deploy and configure SQL Server and support R services

- > R and R Server overview
- > Using R server with machine learning
- > Using R with SQL Server

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