

20774: Perform Cloud Data Science with Azure Machine Learning

Course Details

Course Outline

1. Introduction to Machine Learning

- What is machine learning?
- Introduction to machine learning algorithms
- Introduction to machine learning languages
- Lab : Introduction to machine Learning
- Sign up for Azure machine learning studio account
- View a simple experiment from gallery
- Evaluate an experiment

2. Introduction to Azure Machine Learning

- Azure machine learning overview
- Introduction to Azure machine learning studio
- Developing and hosting Azure machine learning applications
- Lab : Introduction to Azure machine learning
- Explore the Azure machine learning studio workspace
- Clone and run a simple experiment
- Clone an experiment, make some simple changes, and run the experiment

3. Managing Datasets

- Categorizing your data
- Importing data to Azure machine learning
- Exploring and transforming data in Azure machine learning
- Lab : Managing Datasets
- Prepare Azure SQL database
- Import data
- Visualize data
- Summarize data

4. Preparing Data for use with Azure Machine Learning

- Data pre-processing
- Handling incomplete datasets
- Lab : Preparing data for use with Azure machine learning
- Explore some data using Power BI
- Clean the data

5. Using Feature Engineering and Selection

- Using feature engineering
- Using feature selection
- Lab : Using feature engineering and selection
- Prepare datasets
- Use Join to Merge data

6. Building Azure Machine Learning Models

- Azure machine learning workflows
- Scoring and evaluating models
- Using regression algorithms
- Using neural networks
- Lab : Building Azure machine learning models
- Using Azure machine learning studio modules for regression
- Create and run a neural-network based application

7. Using Classification and Clustering with Azure machine learning models

- Using classification algorithms
- Clustering techniques
- Selecting algorithms
- Lab : Using classification and clustering with Azure machine learning models
- Using Azure machine learning studio modules for classification.
- Add k-means section to an experiment
- Add PCA for anomaly detection.
- Evaluate the models

8. Using R and Python with Azure Machine Learning

- Using R
- Using Python
- Incorporating R and Python into Machine Learning experiments
- Lab : Using R and Python with Azure machine learning
- Exploring data using R
- Analyzing data using Python

9. Initializing and Optimizing Machine Learning Models

- Using hyper-parameters
- Using multiple algorithms and models
- Scoring and evaluating Models
- Lab : Initializing and optimizing machine learning models
- Using hyper-parameters

10. Using Azure Machine Learning Models

- Deploying and publishing models
- Consuming Experiments
- Lab : Using Azure machine learning models
- Deploy machine learning models
- Consume a published model

11. Using Cognitive Services

- Cognitive services overview
- Processing language
- Processing images and video
- Recommending products
- Lab : Using Cognitive Services
- Build a language application
- Build a face detection application
- Build a recommendation application

12. Using Machine Learning with HDInsight

- Introduction to HDInsight
- HDInsight cluster types
- HDInsight and machine learning models
- Lab : Machine Learning with HDInsight
- Provision an HDInsight cluster
- Use the HDInsight cluster with MapReduce and Spark

13. Using R Services with Machine Learning

- R and R server overview
- Using R server with machine learning
- Using R with SQL Server
- Lab : Using R services with machine learning
- Deploy DSVM
- Prepare a sample SQL Server database and configure SQL Server and R
- Use a remote R session
- Execute R scripts inside T-SQL statements