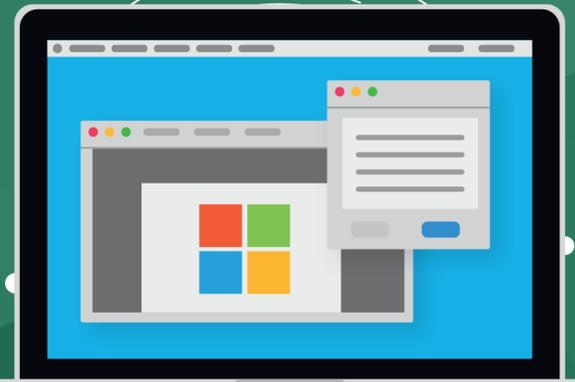# Netec Digital
Certificaciones Profesionales enTI

CURSO
OD20774A
Perform Cloud Data Science with Azure Machine Learning

Microsoft Partner
Gold Learning

Course Outline

Module 1: Introduction to Machine Learning
This module introduces machine learning and discussed how algorithms and languages are used.
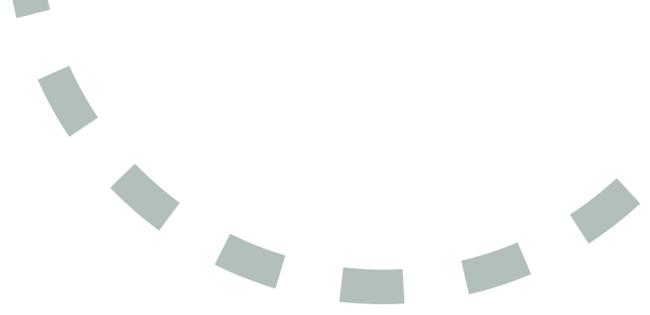
Lessons
- What is machine learning?
- Introduction to machine learning algorithms
- Introduction to machine learning languages

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

After completing this module, students will be able to:
- Describe machine learning
- Describe machine learning algorithms
- Describe machine learning languages

Module 2: Introduction to Azure Machine Learning

Describe the purpose of Azure Machine Learning, and list the main features of Azure Machine Learning Studio.

Lessons
- 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

After completing this module, students will be able to:
- Describe Azure machine learning.
- Use the Azure machine learning studio.
- Describe the Azure machine learning platforms and environments.

Module 3: Managing Datasets

At the end of this module the student will be able to upload and explore various types of data in Azure machine learning.

Lessons
- 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

After completing this module, students will be able to:
- Understand the types of data they have.
- Upload data from a number of different sources.
- Explore the data that has been uploaded.

Module 4: Preparing Data for use with Azure Machine Learning

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

Lessons
- Data pre-processing
- Handling incomplete datasets

Lab : Preparing data for use with Azure machine learning
- Explore some data using Power BI
- Clean the data

After completing this module, students will be able to:
- Pre-process data to clean and normalize it.
- Handle incomplete datasets.

Module 5: Using Feature Engineering and 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.

Lessons
- Using feature engineering
- Using feature selection

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

After completing this module, students will be able to:
- Use feature engineering to manipulate data.
- Use feature selection.

Module 6: Building Azure Machine Learning Models

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

Lessons
- 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

After completing this module, students will be able to:
- Describe machine learning workflows.
- Explain scoring and evaluating models.
- Describe regression algorithms.
- Use a neural-network.

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

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

Lessons
- 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

After completing this module, students will be able to:
- Use classification algorithms.
- Describe clustering techniques.
- Select appropriate 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.

Lessons
- 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

After completing this module, students will be able to:
- Explain the key features and benefits of R.
- Explain the key features and benefits of Python.
- Use Jupyter notebooks.
- Support R and Python.

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.

Lessons
- Using hyper-parameters
- Using multiple algorithms and models
- Scoring and evaluating Models

Lab : Initializing and optimizing machine learning models
- Using hyper-parameters

After completing this module, students will be able to:
- Use hyper-parameters.
- Use multiple algorithms and models to create ensembles.
- Score and evaluate ensembles.

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.
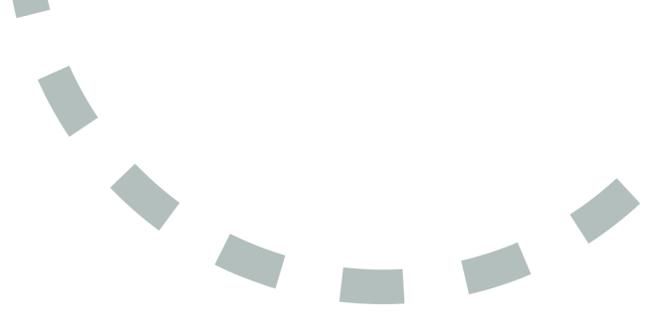
Lessons
- Deploying and publishing models
- Consuming Experiments

Lab : Using Azure machine learning models
- Deploy machine learning models
- Consume a published model

After completing this module, students will be able to:
- Deploy and publish models.
- Export data to a variety of targets.

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.

Lessons
- 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

After completing this module, students will be able to:
- Describe cognitive services.
- Process text through an application.
- Process images through an application.
- Create a recommendation application.

Module 12: Using Machine Learning with HDInsight

This module describes how use HDInsight with Azure machine learning.

Lessons

- 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

After completing this module, students will be able to:

- Describe the features and benefits of HDInsight.
- Describe the different HDInsight cluster types.
- Use HDInsight with 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.

Lessons

- 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

After completing this module, students will be able to:

- Implement interactive queries.
- Perform exploratory data analysis.

Para más información, contáctenos al correo:
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