# Designing and Implementing a Data Science Solution on Azure

# Online Course
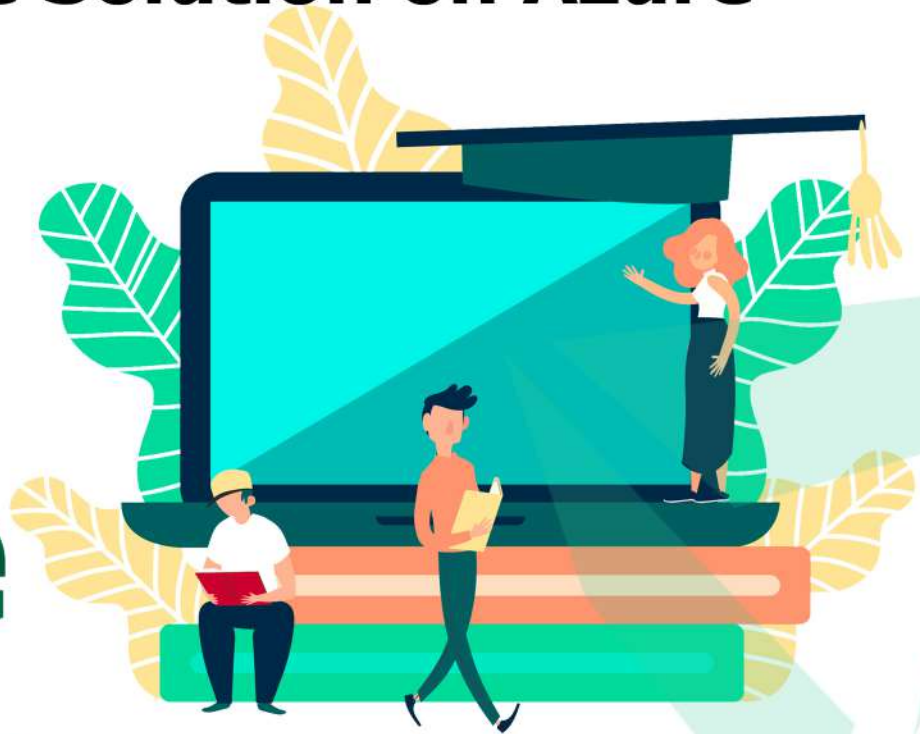
# Designing and Implementing a Data Science Solution on Azure

## Course Modules

### 1. Design and prepare a machine learning solution

**Design a machine learning solution**
- Determine the appropriate compute specifications
- Describe model deployment requirements
- Select which dvpmt approach to use to build or train a model

**Manage an Azure Machine Learning workspace**
- Create an Azure Machine Learning workspace
- Manage a workspace by using developer tools
- Set up Git integration for source control
- Create and manage registries

**Manage data in an Azure Machine Learning workspace**
- Select Azure Storage resources
- Register and maintain datastores
- Create and manage data assets

**Manage compute for experiments in Azure ML**
- Create compute targets for experiments and training
- Select an environment for a machine learning use case
- Attached compute resources, including Apache Spark pools
- Monitor compute utilization

## 2. Explore data and train models

### Explore data by using data assets and data stores
- Access and wrangle data during interactive development
- Wrangle interactive data with Apache Spark

### Create models by using the Azure MLearning designer
- Create a training pipeline
- Consume data assets from the designer
- Use custom code components in designer
- Evaluate the model, including responsible AI guidelines

### Use automated ML to explore optimal models
- Use automated machine learning for tabular data
- Use automated machine learning for computer vision
- Use automated machine learning for natural language processi
- Select and understand training options
- Evaluate an automated machine learning run

### Use notebooks for custom model training
- Develop code by using a compute instance
- Track model training by using MLflow
- Evaluate a model
- Train a model by using Python SDKv2
- Use the terminal to configure a compute instance

## Tune hyperparameters with Azure Machine Learning

- Select a sampling method
- Define the search space
- Define the primary metric
- Define early termination options

## 3. Prepare a model for deployment

## Run model training scripts

- Configure job run settings for a script
- Configure compute for a job run
- Consume data from a data asset in a job
- Run a script as a job by using Azure Machine Learning
- Use MLflow to log metrics from a job run
- Use logs to troubleshoot job run errors
- Configure an environment for a job run
- Define parameters for a job

## Implement training pipelines

- Create a pipeline
- Pass data between steps in a pipeline
- Run and schedule a pipeline
- Monitor pipeline runs
- Create custom components
- Use component-based pipelines

## Manage models in Azure Machine Learning

- Describe MLflow model output
- Identify an appropriate framework to package a model
- Assess a model by using responsible AI guidelines

## 4. Deploy and retrain a model

### Deploy a model

- Configure settings for online deployment
- Configure compute for a batch deployment
- Deploy a model to an online endpoint
- Deploy a model to a batch endpoint
- Test an online deployed service
- Invoke the batch endpoint to start a batch scoring job

### Apply machine learning operations (MLOps) practices

- Trigger an Azure Machine Learning job
- Automate model retrain based on new data adds or data chng
- Define event-based retraining triggers

**LEARN REMOTELY!!**

The efficiency of online learning in terms of time management, flexibility, and the ability to access resources anytime, anywhere can be compelling.

# ZETLAN TECHNOLOGIES

## www.zetlantech.com

For contact:+91 8680961847
+91 9600579474

Zetlan Technologies