BOOST
THE LEADING TRAINING PROVIDER

Digital Transformation and Innovation

Data Mining

Course Introduction

If you need to learn how to understand and create Machine Learning models used to solve business problems, this course is for you. You will learn in this course everything you need about Data Mining process, Machine Learning and how to implement Machine Learning algorithms in Data Mining. This course was designed to provide information in a simple and straight forward way so ease learning methods. You will from scratch and keep building your knowledge step by step until you become familiar with the most used Machine Learning algorithms.

Target Audience

- Business and technology leaders
- Business Unit Managers
- Business Development Consultants
- General Managers / Regional Managers
- Senior and mid-level leaders
- individual leaders of all levels in the organization
- Art Director
- Marketing Consultants
- Marketing Development Manager

Learning Objectives

- Learn everything about Data Mining and its applications
- Understand Machine Learning and its connection with Data Mining
- Learn all Machine Learning algorithms, their types, and their usage in business
- Learn how to implement Machine Learning algorithms in different business scenarios
- Learn how to install and use Python programming language to create machine learning algorithms in a simple way
- Learn how to import your data sets into Python and make required cleaning before creating the algorithms
- Learn how to interpret the results of each algorithms and compare them with each other to choose the optimum one
- Learn how to create graphs in Pythons, such as scattered and regression graphs and use them in your analyses

Course Outline

- **Day 01**

  Introduction to Data Mining

  - Introduction to Machine Learning
  - How Does Machine Learning Work
  - Machine Learning Algorithms Classification
  - Setup Programming Environment
  - Install Anaconda package
  - Supervised Learning Algorithms

  Introduction to Supervised Learning Algorithms

  - Types of Variables
  - Introduction to Regression Model

- Regression Model Slope
- Intercept Value
- R-Squared
- P-Value
- Simple Linear Regression
- Concepts used in Machine Learning (Important**)

- **Day 02**

Overview on the dataset

- Create Simple Linear Regression Model in Python-Part 1
- Create Simple Linear Regression Model in Python-Part 2
- Create Simple Linear Regression Model in Python-Part 3
- Create Simple Linear Regression Model in Python-Part 4
- Multiple Linear Regression
- Dummy Variables
- Step-wise Approach
- Assumptions of Multiple Linear Regression

Overview on the business problem data

- Create Multiple Linear Regression Model in Python-Part 1
- Create Multiple Linear Regression Model in Python-Part 2
- Create Multiple Linear Regression Model in Python-Part 3
- Create Multiple Linear Regression Model in Python-Part 4
- Polynomial Regression
- Overview on the business problem data
- Create Polynomial Regression Model in Python-Part 1
- Create Polynomial Regression Model in Python-Part 2
- Course Rating

- **Day 03**

Introduction to Classification

- Introduction to Logistic Regression
- Confusion Matrix
- Standard Scaler
- Overview on the business problem data
- Create Logistic Regression Model in Python-Part 1
- Create Logistic Regression Model in Python-Part 2

- KNN Classification Algorithm
- Create KNN Model in Python
- Support Vector Machine (SVM) Classification Algorithm
- Create Support Vector Machine in Python
- Naive Bayes Algorithm Part 1
- Naive Bayes Algorithm Part 2
- Create Naive Bayes Model in Python
- Decision Tree Algorithm
- Create Decision Tree Model in Python
- Random Forest Algorithm
- Create Random Forest Model in Python

- **Day 04**

  Unsupervised Learning Algorithms

  - Review Unsupervised Learning Algorithms
  - Hierarchical Clustering Algorithm
  - Dendrogram Diagram Method
  - Overview on the business problem data
  - Create Hierarchical Clustering Algorithm in Python-1
  - Create Hierarchical Clustering Algorithm in Python-2
  - K-means Clustering Algorithm
  - Using Elbow Method to Determine Optimal Number of Clusters
  - Create K-means Clustering Algorithm Model in Python - 1
  - Create K-means Clustering Algorithm Model in Python - 2
  - Association Rules (Market Basket Analysis)
  - Overview on the business problem data
  - Create Association Rules (Market Basket Analysis) Model in Python - 1
  - Create Association Rules (Market Basket Analysis) Model in Python - 2
  - Create Association Rules (Market Basket Analysis) Model in Python - 3

- **Day 05**

  Deep Learning

  - Introduction to Deep Learning
  - How Does Deep Learning Work Part 1
  - How Does Deep Learning Work Part 2
  - Activation Functions
  - What is Tensorflow
  - Create Artificial Neural Network Model in Python Part-1
  - Create Artificial Neural Network Model in Python Part-2

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
Dec. 14, 2025	Dec. 18, 2025	5 days	4250.00 $	Qatar - El Doha