MACHINE LEARNING WITH PYTHON

Who we are

Techeduxon has been a platform for global online technology education since 2015. We are now taking it up a notch higher by introducing ways of advanced learning to up-skill and cross-skill your profession with cutting-edge, customized programs. With our Top Tier IT & Enterprise training Courses, We enable you to the forefront & become 'Industry Ready' in this Advancing & Unforeseen Digital World with your upskill Innovations.

Course Overview

- Introduction to Machine Learning

- Creating a machine learning model
- Data preparation and exploration
- Regression & Classification
- Evaluation of the Classification models
- Unsupervised learning – Clustering
- Dimensionality reduction
- Reinforcement learning
- Introduction to Natural Language Processing
- Introduction to Deep Learning

Pre requisites

No pre requisites are required to take up this course.

Target audience

Developers, Analytical Managers, Business Analyst , Information Architects and Python Professionals who wants to design automatic models.

Course Contents

Introduction to Machine Learning (ML)

- What is Machine learning
- Applications of Machine Learning
- Why ML and Uses of ML
- Machine learning methods
- Machine learning algorithms (regression ,Classification , clustering and association)
- Brief introduction to python libraries.

Creating a Machine Learning model

- Types of ML algorithms Labelled Dataset
- Training and Testing Data
- Importing the Libraries & Importing the Dataset
- Creating a machine model

Data Preparation and exploration

- What is data and What is meant by information?
- Analyzing data to fetch the information
- Entropy, Information gain
- Data exploration and preparation

- Uni variate, bi variate, and multivariate analysis
- Correlation ,Chi-Square, Z-test, T-test, ANOVA
- Categorical Data
- Feature Scaling, Dimensionality Reduction and Outliers

Regression

- What is regression?
- Applications of regression & Types of regression
- Fitting the regression line
- Simple linear regression in python
- Polynomial regression in python
- Gradient Descent
- Cost function
- Regularization
- How to Perform regression on a real world dataset
- Ridge and lasso Regression

Classification

- How is classification used and Applications of classification
- Logistic Regression, Sigmoid function
- Decision tree
- K-Nearest Neighbours (K-NN)
- SVM
- Naive Bayes
- Understand limitations of linear classifier and evaluate abilities of non-linear classifiers using a data set

Evaluation of Classification models

- Confusion Matrix
- Precision, Recall
- F1-score ,RoC, AuC
- n-fold cross validation
- Measuring classifier performance and Overfitting, Ensemble Learning
- Bagging and Boosting

Unsupervised learning – Clustering

- Application of Unsupervised learning, examples, and applications

- Clustering ,Hierarchical Clustering in Python, Agglomerative and Divisive techniques
- Measuring the distance between two clusters
- k-means algorithm ,Limitations of K-means clustering
- SSE and Distortion measurements
- Agglomerative Hierarchical clustering

Dimensionality Reduction

- What is dimensionality reduction?
- Applications of dimensionality reduction
- Feature selection, extraction
- Dimensionality reduction via Principal component analysis
- Eigenvalue and Eigenvectors
- Hands on PCA on data

Reinforcement learing

- What is reinforcement learning
- Applications of reinforcement learning
- An Example use case Components of RL
- Approaches to RL & RL algorithms
- Deep reinforcement learning

Introduction to Natural Learning Process (NLP)

- What is NLP, Why NLP?
- Applications and Components of NLP & NLP techniques

Introduction to Deep Learning

- Why deep learning?
- Neural networks and Applications of neural networks
- Biological Neuron vs Artificial Neuron
- Artificial Neural networks, layers

Projects & Assignments

Our Expert trainers will provide the real time Projects &Assignments.