Syllabus

Introduction to Machine Learning Using Python- SSCADP17

Total: 30 Hours

MODULE 1

Introduction to Python, Types of numeric data, strings, Basic output statements, List, tuples, dictionaries and sets. (8 Hours)

MODULE 2

Introduction, Control flow structures – if-else statements, while, for loops, defining functions in python, Classes and objects.

Core Libraries- Numpy, Pandas, Matplotlib.pyplot.

Plotting data in Python: Scatter plots, histogram, cumulative frequencies, error-bars, box plots, pie charts. (7 Hours)

MODULE 3

Introduction to Machine learning, difference between machine learning and Statistics, Supervised and Unsupervised learning, Decision Tree Learning, Basic decision tree algorithm (7 Hours)

MODULE 4

Artificial Neural Networks: Neural network representation, Appropriate problems for neural network learning, perceptron, multilayer networking.

Bayesian Learning: Bayes theorem and concept of learning Naive Bayes Classifier Ensemble Learning: Boosting Procedures, The AdaBoost Algorithm, The Bagging Algorithm, Random Tree Ensembles- Random Forest. (8 Hours)

Text Book

1. Bharti Motwani, Data Analytics using Python, Wiley India Limited 2020.

2. Schneider, David I, An Introduction to Programming Using Python, Pearson Education Limited 2016.