Syllabus of AI (Artificial Intelligence) Training in Bangalore

Module 1: Introduction to Data Science (Duration-1hr)

- What is Data Science?
- What is Machine Learning?
- What is Deep Learning?
- What is AI?
- þÿ D a t a A n a l y t i c s & i t s t y p e s

Module 2: Introduction to Python (Duration-1hr)

- What is Python?
- Why Python?
- Installing Python
- Python IDEs
- Jupyter Notebook Overview

Module 3: Python Basics (Duration-5hrs)

- Python Basic Data types
- Lists

- Slicing
- IF statements
- Loops
- Dictionaries
- Tuples
- Functions
- Array
- Selection by position & Labels

Module 4: Python Packages (Duration-2hrs)

- Pandas
- Numpy
- Sci-kit Learn
- Mat-plot library

Module 5: Importing Data (Duration-1hr)

- Reading CSV files
- Saving in Python data
- Loading Python data objects

- Writing data to CSV file

Module 6: Manipulating Data (Duration-1hr)

- Selecting rows/observations
- Rounding Number
- Selecting columns/fields
- Merging data
- Data aggregation
- Data munging techniques

Module 7: Statistics Basics (Duration-11hrs)

Central Tendency

- Mean
- Median
- Mode
- Skewness
- Normal Distribution

Probability Basics

- What does it mean by probability?

- Types of Probability
- ODDS Ratio?

Standard Deviation

- Data deviation & distribution
- Variance

Bias variance Tradeoff

- Underfitting
- Overfitting

Distance metrics

- Euclidean Distance
- Manhattan Distance

Outlier analysis

- What is an Outlier?
- Inter Quartile Range
- Box & whisker plot
- Upper Whisker

- Lower Whisker
- Scatter plot
- þÿ C o o k s D i s t a n c e

Missing Value treatment

- What is NA?
- Central Imputation
- KNN imputation
- Dummification

Correlation

- Pearson correlation
- positive & Negative correlation

Module 8: Error Metrics (Duration-3hrs)

Classification

- Confusion Matrix
- Precision
- Recall

- Specificity
- F1 Score

Regression

- MSE
- RMSE
- MAPE

Module 9: Machine Learning

Supervised Learning (Duration-6hrs)

Linear Regression

- Linear Equation
- Slope
- Intercept
- R square value

Logistic regression

- ODDS ratio
- Probability of success

- Probability of failure Bias Variance Tradeoff
- ROC curve
- Bias Variance Tradeoff

Unsupervised Learning (Duration-4hrs)

- K-Means
- K-Means ++
- Hierarchical Clustering

SVM (Duration-2hrs)

- Support Vectors
- Hyperplanes
- 2-D Case
- Linear Hyperplane

SVM Kernal (Duration-2hrs)

- Linear
- Radial
- polynomial

Other Machine Learning algorithms (Duration-10hrs)

- þÿ K Nearest Neighbour
- Naïve Bayes Classifier
- þÿ Decision Tree CART
- þÿ Decision Tree C50
- Random Forest

Module 10: ARTIFICIAL INTELLIGENCE

AI Introduction (Duration-9hrs)

- Perceptron
- Multi-Layer perceptron
- Markov Decision Process
- Logical Agent & First Order Logic
- AL Applications

Module 11: Deep Learning Algorithms (Duration-10hrs)

- þÿ CNN Convolutional Neural Network
- þÿ RNN Recurrent Neural Network
- þÿ ANN Artificial Neural Network

Introduction to NLP (Duration-5hrs)

- Text Pre-processing
- Noise Removal
- Lexicon Normalization
- Lemmatization
- Stemming
- Object Standardization

Text to Features (Feature Engineering) (Duration-5hrs)

- Syntactical Parsing
- Dependency Grammar
- Part of Speech Tagging
- Entity Parsing
- Named Entity Recognition
- Topic Modelling
- N-Grams
- þÿ T F I D F
- Frequency / Density Features

- þÿ W o r d E m b e d d i n g s

Tasks of NLP (Duration-2hrs)

- Text Classification
- Text Matching
- Levenshtein Distance
- Phonetic Matching
- Flexible String Matching