Python Programming

- ➤ Introduction to Python
- ➤ Basic Data Types
- ➤ Sequence Data Types
- ➤ Collection and Mapping Data Types
- ➤ Loops and Conditional Statements
- ➤ Functions , Iterators and Generators
- ➤ OOPS concepts
- ➤ Handling Exceptions
- ➤ Packages and Modules
- ➤ Programing Excercises

Numpy - Python Package

- ➤ Anaconda - Popular Scientific Distributions
- ➤ IPython Components
- ➤ Introduction to Jupyter Notebook
- ➤ Introduction to NumPy
- ➤ Creation of NumPy Array
- ➤ Array Shape Manipulation
- ➤ Basic Operations on NumPy Arrays
- ➤ Indexing, Slicing, Iterating Numpy Arrays
- ➤ Excercises on Numpy Array

Panda - Data Analysis Tool

- ➤ Panda's Data Structures
- ➤ Accessing Data with Panda
- ➤ Knowing Data More
- ➤ Data Frame
- ➤ Indexing Data Frame

- ➤ Data Cleaning
- ➤ Data Aggregation
- ➤ Data Merging
- ➤ Excercises with Real time DataSets

Data Visualisation with Matplotlib

- ➤ Introduction to Matplotlib
- ➤ Matplotlib Figure
- ➤ Line Plot and Scatter Plots
- ➤ Bar and Pie Plots
- ➤ Histograms and Box Plots
- ➤ Subplots
- ➤ Excercises

Statisctics and Probability

- ➤ Statistics and Data
- ➤ Statistics - Scenarioes
- ➤ Probability Essentials
- ➤ Rules of Probability
- ➤ Random variables
- ➤ Expected Value and Variance
- ➤ Discrete Distribution
- ➤ Continuous Distribution
- ➤ Normal Distribution
- ➤ Naive Bayes Theorem
- ➤ Hypothesis Testing
- ➤ Chi-Sqaured Testing
- ➤ Multivariate Data Analysis
- ➤ Prior and Posterior Probability
- ➤ Markov Process
- ➤ Cumulative Density Function
- ➤ Kernel Density Estimation

- ➤ Vector
- ➤ Matrices and Linear Transformations
- ➤ Matrix Multiplication
- ➤ Determinant of Matrix
- ➤ Matrix Dot and Cross Product
- ➤ Eigenvectors and Eigenvalues
- ➤ Singular Value Decompositions
- ➤ Excercises

Machine Learning Axioms

- ➤ Supervised and Unsupervised Learning
- ➤ Features and Labels
- ➤ Regression and Classification
- ➤ Simple Linear Regression Model
- ➤ Multiple Linear Regression Model
- ➤ Logistic Regression
- ➤ Decission Tree
- ➤ Naive Bayes
- ➤ Gradient Descent
- ➤ Support Vector Machine
- ➤ Kernel Tricks
- ➤ K Nearest Neighbour (KNN)
- ➤ Clustering
- ➤ K-Means Clustering
- ➤ Neural networks
- ➤ Bagging and Boosting Algorithms
- ➤ Random Forest Algorithm
- ➤ Dataset Spliting - Training and Testing
- ➤ Cross validation
- ➤ Model Evaluation Techniques