



## Curriculum Of Machine Learning with Python

### MODULE 1: MACHINE LEARNING

- Introduction to ML, What is ML? Why ML?
- Introduction to Supervised ML & Unsupervised ML
- Difference Between AI | DL | ML
- Application and Use

### MODULE 2: TOOLS REQUIRED FOR DEVELOPMENT - ANACONDA, JUPYTER NB/GOOGLE COLAB/SPYDER

- ML libraries
- NumPy: Introduction to NumPy
- Pandas: Introduction | Data Frame! Loading datasets! Loading data from database! pandas Operation.
- Matplotlib: Introduction | Line Chart! Pie Chart | Scatter Plot!
- Bar chart! Histogram.
- Sklearn: Introduction | Sklearn-API | Statsmodels.API
- ML Glossary- Variable types, k-fold CV, AUC,
- F1 score, Overfitting/Underfitting, Generalization, ROC | Confusion matrix
- Mathematical Background for ML- Matrix Ops Probability Theory (Bayes' Theorem)
- Statistical knowledge for ML- Mean, Median, Mode, Z-scores, bias -variance dichotomy
- Exploratory Data analysis using Visualisation Scikit-learn Library for ML
- Code Exercises.

### MODULE 3: STEPS OF MACHINE LEARNING

- Data Collection. The quantity & quality of your data dictate how accurate our model is...
- Data Preparation. Wrangle data and prepare it for training! Data wrangling using Pandas! Pre-processing
- Data and feature engineering | Data split
- Choose a Model.
- Train the Model....
- Evaluate the Model...
- 6- Parameter Tuning | hyper parameter training
- Make Predictions.

### MODULE 4: SUPERVISED LEARNING

- Introduction! Maths behind Supervised Machine Learning and Algo.

### MODULE 5: REGRESSION

- Linear Regression!
- Multi-Linear Regression



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- Lasso
- Rigde
- Decision Tree Regressor
- Support Vector Regressor

### MODULE 6: CLASSIFICATION

- Logistic Regression
- KNN-K Nearest Neighbours
- Support Vector Classifier (SVM-SVC)
- Decision Tree Classifier (DTC)
- Random Forest
- Naïve Bayes
- Ensemble Learning

### MODULE 7: UNSUPERVISED MACHINE LEARNING CLUSTERING

- Introduction: Mathematics behind Clustering

### MODULE 8: K-MEANS CLUSTERING

- Implementation of K-mean Clustering

### MODULE 9: H-CLUSTERING

- Implementation of H-clustering
- Code Exercises

### MODULE 10: ASSOCIATION RULE:

- Apiori rule

### MODULE 11: DIMENSIONALITY REDUCTION

- Principle Component Analysis (PCA).

### MODULE 12: CAPSTONE PROJECT

- Ibm Attrition Rate Prediction Using Machine Learning
- Covid-19 Patient Outcome Prediction Using MI
- Estimate The Online Sales Of a E-Commerce Retail Firm Using MI
- Gui Based Machine Learning Application to Classify the Plant
- Species of Iris Flower
- Predict The Churn Rate in A Telecom Company Using MI
- Mall Customer Segmentation Using MI
- Market Basket Analysis and Assit a Shopping Mall To Stack Product



## Curriculum Of Machine Learning with Python

- Predict and Estimate Car Re-Sale Value Using Machine Learning
- Working On Inbulit Datasets
- Prediction! Classification of Handwritten Digits