GeeksforGeeks

Machine Learning

Basic Level Course

Detailed
Course Syllabus

1. ML | Machine Learning Understanding

- **a.** What is Machine Learning
- **b.** Data in Machine Learning
- **c.** Installation of Anaconda
- **d.** Working of Jupyter Notebook

2. ML | Handling Data

- **a. Numpy**
  - i. **Numpy -** Creating Numpy Array
  - ii. **Numpy -** Array Dimensions
  - iii. **Numpy -** Reversing Rows and Columns
  - iv. **Numpy -** Specific Element Extraction
  - v. **Numpy -** Basic Statistics
  - vi. **Numpy -** Reshaping and Flattening
  - vii. **Numpy -** Random Arrays and Sequences
  - viii. **Numpy -** Unique Items and Count
- **b. Pandas**
  - i. **Pandas -** Working of DataFrames
  - ii. **Pandas -** Working on CSV
  - iii. **Pandas -** Missing Values
  - iv. **Pandas -** Statistics
- **c. Matplotlib**
  - i. **Matplotlib -** Line Graph and Scatter Plot
  - ii. **Matplotlib -** Bar Graph
  - iii. **Matplotlib -** Bubble Graph and Pie Chart
- **d.** Categorical data
- **e.** Data Scaling Intuition
- **f.** Data Scaling
- **g.** Data Splitting Intuition
- **h.** Data Splitting
- **i.** Handling Missing Data

3. ML | Regression

a. **Linear Regression**
   i. Linear Regression Intuition - 1
   ii. Linear Regression Intuition - 2
   iii. Linear Regression Scratch - Part 1
   iv. Linear Regression Scratch - Part 2 - Forward Propagation
   v. Linear Regression Scratch - Part 3 - Cost Function
   vi. Linear Regression Scratch - Part 4 - Gradient Descent
   vii. Linear Regression Scratch - Part 5 - Training Linear Regression Model and Predicting
   viii. Linear Regression using sklearn
b. **Polynomial Linear Regression**
   i. Polynomial Linear Regression Intuition
   ii. Polynomial Linear Regression Hands-On
c. **Support Vector**
   i. Support Vector Regressor Intuition
   ii. Support Vector 2 Kernels
   iii. Support Vector Regression Code
d. **Decision Tree**
   i. Decision Tree Intuition
   ii. Decision Tree Code
e. **Random Forest**
   i. Random Forest Intuition
   ii. Random Forest Code

4. ML | Classification

a. **Logistic Regression**
   i. Logistic Regression Intuition
   ii. Logistic Regression Code
b. **K-Nearest Neighbor**
   i. K-Nearest Neighbor Intuition
   ii. K-Nearest Neighbor Code
c. **Naive Bayes**
   i. Naive Bayes Intuition
   ii. Naive Bayes Code

d. **Decision Tree**
    i. Decision Tree Intuition
    ii. Decision Tree Code
e. **Random Forest**

5. ML | Clustering

a. **K-Means Algorithm**
    i. K-Means Intuition
    ii. K-Means Elbow Method
    iii. K-Means Code
b. **Agglomerative Algorithm**
    i. Agglomerative Intuition
    ii. Agglomerative Dendrogram
    iii. Agglomerative Code

6. ML | Data Dimensionality

a. **Feature Selection**
    i. Feature Selection - Correlation Matrix
    ii. Feature Selection - ExtraTreeClassifier
    iii. CHI Square Test
    iv. Feature Selection - KBest Method
b. **K-Fold**
    i. K-Fold Intuition
    ii. K-Fold Code
c. **Principal Component Analysis (PCA)**
d. **t-distributed Stochastic Neighbor Embedding (TSNE)**

7. ML | Association Mining

a. Association Rule Mining Intuition
b. Apriori Code - 1
c. Apriori Code - 2

8. ML | Natural Language Processing

a. NLP Intuition
b. NLP - 1
c. NLP - 2
d. NLP - 3