Classification Modeling in Machine Learning

MODULE 1 :- Introduction to Machine Learning

- Basics of Machine Learning
- What and why Machine Learning
- Applications of Machine Learning
- Types of Machine Learning
- Main Challenges of Machine Learning

MODULE 2 :- Scikit Learn

- Introduction to Scikit Learn
- Features of Scikit-Learn
- CONVENTIONS
- IMPLEMENTATION STEPS

DEMO 1 - Scikit- Learn Introduction and model training

MODULE 3 :- Data pre-processing

- Is your data clean?
- What is Data Pre processing ?
- Data cleaning techniques

DEMO 2 - Missing value imputation by Mean, Median

- Handling Missing data
- Handling Categorical data

DEMO 3 - Handling Missing Value

DEMO 4 - Handling Categorical Value

MODULE 4 :- Feature Engineering

- Introduction
- Need for Feature Engineering in Machine Learning
- Steps in Feature Engineering
- Feature Engineering Techniques

    DEMO 5_Feature_scaling

    DEMO 6_Discretisation

    DEMO 7_Feature_Encoding

    DEMO 8_Feature_Transformation

MODULE 5 :- Logistic Regression

- **Introduction to Logistic Regression**
- **Confusion Matrix**
- **Loading Data**
- **Visualisation**
- **Data Cleaning**
- **Training**
- **Testing**

    DEMO 9_Logistic Regression Project

MODULE 6 :- SUPPORT VECTOR MACHINE

- **Loading Data**
- **Visualisation**
- **Data Cleaning**
- **Training and Testing**

DEMO 10_SVM Project

MODULE 7 :- K-Nearest Neighbour

- **Loading Data**
- **Visualisation**
- **Data Cleaning**
- **Training and Testing**
  DEMO 11_KNN Project

MODULE 8 :- CLASSIFICATION TREE

- Classification tree
- Preprocessing
- Training
- Advantages and Disadvantages of Decision Trees
  DEMO 12_Classification Tree Implementation

MODULE 9 :- NAIVE BAYES

- **Loading Data**

- **Visualisation**
- **Data Cleaning**
- **Training and Testing**

  DEMO 13_Naive Bayes Project

MODULE 11 :- ENSEMBLE TECHNIQUE

1. Implementation of BAGGING
2. Implementation of RANDOM FOREST
3. Implementation of BOOSTING
4. Decision Tree

   DEMO 14_ Implementation of Bagging

   DEMO 15_ Implementation of Random Forest 1

   DEMO 16_ ENSEMBLE Implementation

MODULE 12 :- MODEL SELECTION AND TUNING

- Intro to Selection & Tuning
- Hyperparameters
- Imbalanced Classes
- Confusion Matrix
- Accuracy, Precision & Recall
- Multi-class Confusion Matrix
- Multi-class Scoring
- Model Selection
- Model Drift
- Model Selection & Tuning

  DEMO 17_ Model Selection Implementation