

(23A31403) AI & ML Lab

Prepare Lab Experiment

1. Pandas Library

- a) Write a python program to implement Pandas Series with labels.
- b) Create a Pandas Series from a dictionary.
- c) Creating a Pandas Data Frame.
- d) Write a program

which makes use of the following Pandas methods

- i) describe ()
- ii) head ()
- iii) tail ()
- iv) info ()

UNIT-I (Evolution of Machine Learning) from TextBook

2. Pandas Library: Visualization a) Write a program which use pandas inbuilt visualization to plot following graphs:

- i. Bar plots
- ii. Histograms
- iii. Line plots
- iv. Scatter plots

UNIT-I (Paradigms for ML) from TextBook

3. Write a Program to Implement Breadth First Search using Python.

UNIT-I (Learning by Deduction and Learning by Abduction) from TextBook

5. Write a Program to Implement Depth First Search using Python.

UNIT-I (Learning by Deduction and Learning by Abduction) from TextBook

8. Apply the following Pre-processing techniques for a given dataset.

- a. Attribute selection
- b. Handling Missing Values
- c. Discretization
- d. Elimination of Outliers

UNIT-I (Feature Engineering) from TextBook

9. Apply KNN algorithm for classification and regression

UNIT-II (K-Nearest Neighbor Classifier, Radius Distance Nearest Neighbor Algorithm, KNN Regression) from PPT slide information

10. Demonstrate decision tree algorithm for a classification problem and perform parameter tuning for better results

Unit-III(Decision Trees for Classification & Regression) from PPT slide information

11. Apply Random Forest algorithm for classification and regression

Unit-III(Bias–Variance Trade-off, Random Forests for Classification and Regression) from PPT slide information

12. Demonstrate Naïve Bayes Classification algorithm.

Unit-III(Naive Bayes Classifier) from PPT slide information

13. Apply Support Vector algorithm for classification

Unit-IV(Support Vector Machines, Linearly Non-Separable Case, Non-linear SVM, Kernel Trick) from PPT slide information