Artificial Intelligence with Python

Assignment 7

Problem 1: SVM

Consider the dataset from data_banknote_authentication.csv

0) Read data into a pandas dataframe.

1) Pick the column named "class" as target variable y and all other columns as feature variables X.

2) Split the data into training and testing sets with 80/20 ratio and random_state=20.

3) Use support vector classifier with linear kernel to fit to the training data.

4) Predict on the testing data and compute the confusion matrix and classification report.

5) Repeat steps 3 and 4 for the radial basis function kernel.

6) Compare the two SVM models in your own words.

Problem 2: Decision tree

Consider data from file suv.csv

0) Read the data into a pandas dataframe.

1) Pick Age and Estimated Salary as the features and Purchased as the target variable.

2) Split the data into training and testing sets with 80/20 ratio.

3) Scale the features using standard scaler.

4) Train a decision tree classifier with entropy criterion and predict on test set.

5) Print the confusion matrix and the classification report.

6) Repeat steps 4 and 5 with the gini criterion.

7) Discuss the performance of your models.