CS 6301- Machine learninng Lab- Week 14

Date: 03.11.2023

TITLE

RANDOM FOREST, BAGGING AND BOOSTING

TASK

The customer Dataset (**Customer.csv**) consists of information about 381 customers and status of their loan application result (Y/N) as a binary (2-class) classification problem.

a) Consider the columns***: Gender, Married, Education, ApplicantIncome, CoapplicantIncome, LoanAmount, Loan_Amount_Term, Credit_History, Property_Area*** as feature Input (X) and ***Loan_Status*** as label ouput (Y).
b) Perform the necessary conversion (label encoding and feature scaling) of appropriate features.
c) Classify the data set (20% test, 80% training) by using both **Decision Tree** and **Random Forest** Algorithms.
d) For the Decision Tree Algorithm generate the Tree and show/save it as an image file.
e) Classify the above dataset (20% testing) by using Bagging and Adaboost and compare the performance.
f) Show the **accuracies** and **confusion matrices** for the test set.