**CS 6301- Machine learning Lab- Week 11**

Date: 25.04.2024

1. RANDOM FOREST, BAGGING AND BOOSTING

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.

2. Implement SVM with linear, RBF and Gaussian kernels and compare the

accuracy and visualize the same.(data.mat)