Random forest

A random forest is a type of ensemble machine learning algorithm that combines multiple decision trees to improve the accuracy & robustness of predictions.

Algorithm:

I/p : Training dataset D with feature X, labels y

1. Set the no of trees
2. Set the no of features to consider at each split, m

For each tree i from 1 to T:
   a. create a sample, Di randomly sampling the dataset
   b. Build a decision tree using sample D=i
   c. store the trained dT in the forest.

3. To make prediction:
   a. For a new i/p sample x)
      i. Pass x through each tree
      ii. collect the predictions
         - If classification - majority
         - If regression - Average.

Lab - 7

Implement Random forest ensemble method

SNo	CGPA	Interactiveness	Communication skills	Practical knowledge	Job offer
1	≥ 9	Yes	Good	Good	Yes
2	< 9	No	Moderate	Good	Yes
3	≥ 9	No	Moderate	Average	No
4	≥ 9	No	Moderate	Average	No
5	≥ 9	Yes	Moderate	Good	Yes

1)

2)