

CS481– Data Science Assignment 02

Due Date: 29th March 2021

Total Marks: 80

- Use Naive Bayes Classifier to Classify Test Samples from Table 2. Use Table 1 for Training. Show all steps clearly [**20 Points**].
- Use Table 1 to create Decision Tree using C4.5 and CART. Use Depth = 1 i.e. only root node. Show all steps clearly. [**30 Points**]
- Consider the following positive examples (3,1),(4,-1),(5,1),(5,-1) and following negative example (1,0),(1,1),(0,-1),(-1,0). Complete the following [**30 Points**]
 1. Plot these datapoints
 2. Select important support vector
 3. Draw SVM Architecture and use I as identity function
 4. Apply SVM
 5. Find class label of following examples (3,2), (1,5), (1,-1)

Refund	Status	Tax Income	Cheat
Yes	Single	115	Yes
Yes	Single	60	No
Yes	Married	50	Yes
Yes	Married	130	Yes
Yes	Married	80	No
Yes	Divorced	130	Yes
Yes	Divorced	80	No
No	Single	75	No
No	Divorced	65	Yes
No	Married	125	Yes
No	Married	80	No
No	Divorced	90	Yes
No	Single	70	No

Table 1: Training Data.

Refund	Status	Tax Income	Cheat
Yes	Single	110	?
Yes	Single	5	?
Yes	Married	95	?
No	Divorced	63	?

Table 2: Test Data.