

Problem Set 03

1. Sims (4p)

Invent the two characters Taylor and Robin each with a weight in the range of [63-74] kg and a shoe size in the range of [40-44]. Decide (by hand) with Naïve Bayes using the probability density function whether your Taylor and Robin are female or male based on the following statistics.

Sample	Attributes		Sex
	Weight (kg)	Shoe size	
S01	82	45	Male
S02	80	45	Male
S03	77	43	Male
S04	72	43	Male
S05	60	39	Female
S06	64	41	Female
S07	59	40	Female
S08	65	41	Female

2. Computer (6p)

Build a decision tree (by hand) based on the following data and using information theory. Then use WEKA to see if you get the same decision tree (ID3). Use this tree to decide if Edward, the senior student, would buy a new PC with his high income and good credit rating.

Sample	Attributes				Buy new Computer
	Age	Income	Student	Credit rating	
S01	Youth	High	No	Good	No
S02	Youth	High	No	Excellent	No
S03	Middle-aged	High	Yes	Good	Yes
S04	Senior	Medium	Yes	Good	Yes
S05	Senior	Low	Yes	Good	Yes
S06	Senior	Low	Yes	Excellent	No
S07	Middle-aged	Low	Yes	Excellent	Yes
S08	Youth	Medium	No	Good	No
S09	Youth	Low	Yes	Good	Yes
S10	Senior	Medium	Yes	Good	Yes
S11	Youth	High	Yes	Excellent	Yes
S12	Middle-aged	Medium	No	Excellent	Yes
S13	Senior	Medium	No	Excellent	No
S14	Middle-aged	High	Yes	Good	Yes

Deadline:

October 24, 2016 at 8:00 AM