Haven's Light is Our Guide

Rajshahi University of Engineering & Technology

Department of Computer Science & Engineering

Couse No. CSE 4203, Marks 20, Time 35 min.

1. Consider the following data set: 10

Height	Weight	Class*
158	58	B
158	59	B
158	63	B
160	64	R
163	64	R
165	61	R

* Rugby player (R) or Ballet Dancer (B)

New, a person has height 161 and weight 61. Determine which class the person belongs to using KNN where k = 3, and distance function is: i) Euclidian ii) City-block

2. Say we have 1000 fruits which could be either 'banana', 'orange' or 'other'. The features of the fruits are long, sweet and yellow. Train dataset is: 10

	Long	Sweet	Yellow	Total
Banana	400	350	450	500
Orange	0	150	300	300
Other	100	150	50	200

Let's say you are given a fruit that is: Long, Sweet and Yellow, can you predict what fruit it is using Naive Bayes classifier?

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Couse No. CSE 4203, Marks 20, Time 30 min. CT-2

1. i. Write down the perceptron learning algorithm [5] 10
   ii. How can we adapt weight using adaption rate? [2]
   iii. How can we adapt weight using Widrow-Hoff delta rule? [3]
2. Let, we have the following dataset: 10

Pattern	Feature1	Feature2	Class
1	2	1	0
2	5	6	1

Initial Weight: W = [1 2]. Illustrate the perceptron learning algorithm (loop: at least 2 times)

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Couse No. **CSE 4203**, Marks **20**, Time 30 min. CT-3

1. Describe the learning difficulties in multilayer perceptron algorithm 8
2. Describe the fault tolerance of multilayer perceptron networks. 5
3. Write down the multilayer perceptron learning algorithm 7