**CST8390 - Lab 2**

**K Nearest Neighbor (kNN)**

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1. 1. What is the **percentage** of correctly classified items? \_\_\_\_94.9438%\_\_\_\_\_
   2. What are the True Positive (TP) rates of **each** class? \_\_1, 0.873, 1
   3. Look at the confusion matrix, which class is incorrectly classified?

\_\_\_\_\_b\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Fill in the table.
2. Fill in the table.

|  |  |  |
| --- | --- | --- |
| K | Percentage of correctly classified instances | Number of instances misclassified in each class |
| 3 | 94.9438 | 1:0  2:9  3:0 |
| 5 | 95.5056 | 1: 0  2: 7  3: 1 |
| 7 | 94.9438 | 1: 0  2: 8  3: 1 |
| 9 | 96.0674 | 1: 0  2: 6  3: 1 |

1. Repeat step 9 with “Percentage Split” of 70. Fill in the following table.

|  |  |  |
| --- | --- | --- |
| K | Percentage of correctly classified instances | Number of instances misclassified in **each** class |
| 3 | 100 | 1: 0  2: 0  3: 0 |
| 5 | 98.1132 | 1: 0  2: 1  3: 0 |
| 7 | 100 | 1:0  2:0  3:0 |
| 9 | 100 | 1:0  2:0  3:0 |

1. Explanation of the process and the screenshot.

Student Number: 041012318

Total number of instances:

Student Number % Total number of instances: 50

Instance to be tested:

Steps of the Test Process:

1. Find Euclidean distance between the sample and other instances
2. After finding the distance between instances we rank the distance in ascending order.
3. We find nearest neighbors of sample instance and determine the class
4. Paste a screenshot of the histogram.

A screenshot of a computer

Description automatically generated