CS 4442 Artificial Intelligence II - Assignment 1

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# Question 3:

b) Tested using the full data set, not the tiny one.

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| --- | --- |
| k Value | Error |
| 1 | 0.0835 |
| 3 | 0.0790 |
| 5 | 0.0850 |
| 7 | 0.0885 |

The error is consistently low, no matter the value of K. Therefore, in this test, there don’t seem to be an outstandingly large effect on the error when K is changed. This could be a consequence of the fact that error is consistently low and therefore increasing the k value can’t make a significant improvement to the accuracy of the classifier.

c) The six most common confusions are 2 classified as 8, 0 misclassified as 5, 2 misclassified as 3, 4 misclassified as 9, 8 misclassified as 3 and 8 misclassified as 2 at a rate of 12, 12, 9, 9, 8 and 8, respectively. About half of the remaining cells are 0, with the rest being below 6.

For the six most common confusions, the confusion matrix is not symmetrical except for the 2 and 8 values. For the remaining symmetric values, there is no noticeable trend, however, the tend to be non-zero.

# Question 4:

# Question 5:

# Question 6:

# Question 7:

# Question 8:

# Question 10: