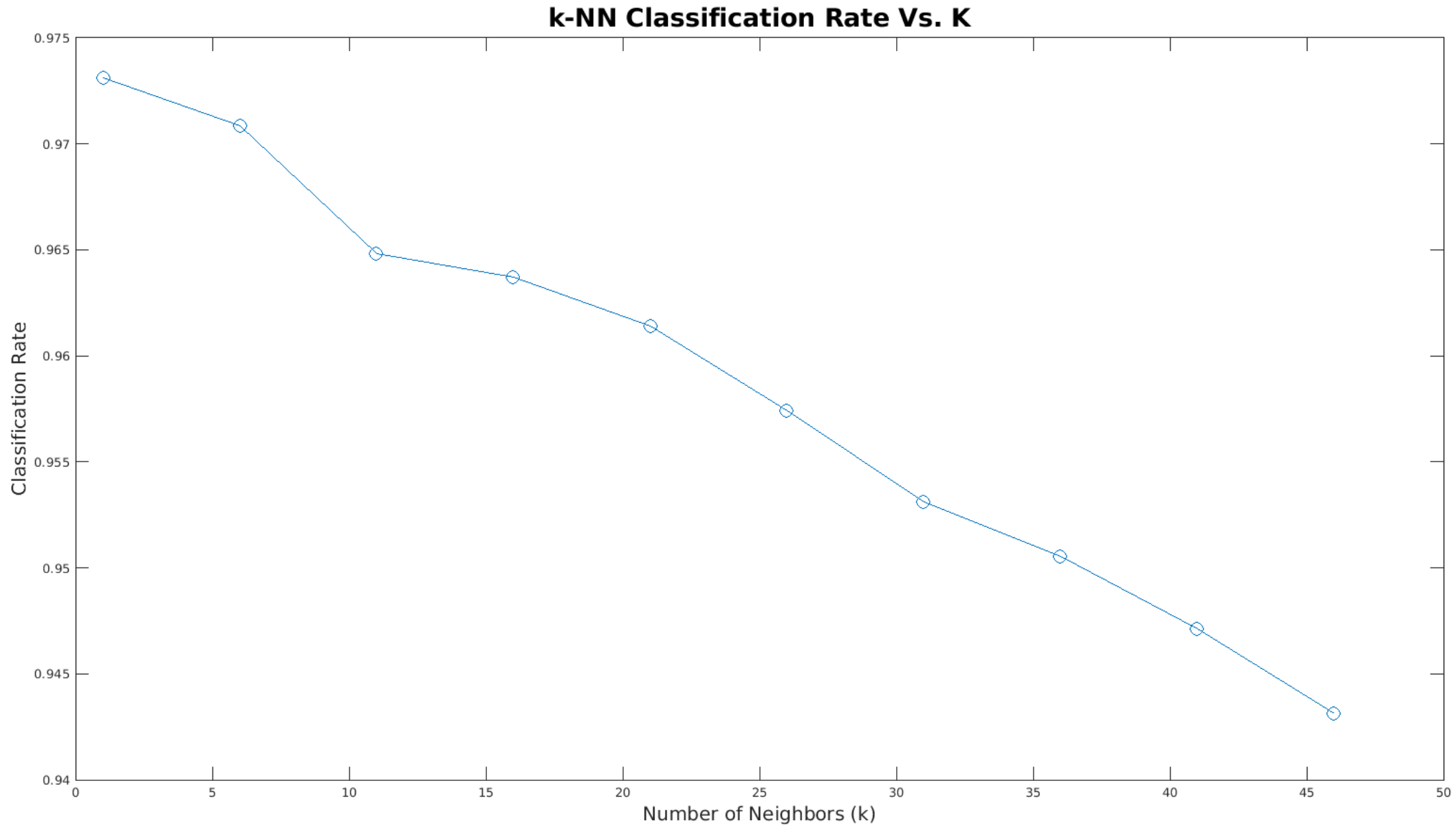
Assignment #7 (Machine Learning)

Javier Salazar

1001144647

Results


k-NN Classification Rate Vs. K
Classification Rate
Number of Neighbors (k)
0.975
0.97
0.965
0.96
0.955
0.95
0.945
0.94
0
5
10
15
20
25
30
35
40
45
50

Results

Classification Rate Vs # of Neighbors	
K Neighbors	Classification Rate
1	0.9731
2	0.9680
3	0.9731
4	0.9711
5	0.9706
10	0.9666
50	0.9403
100	0.9037
500	0.7879
1000	0.6738

Analysis

- The script ‘singleK.m’ is for running one specific run of k neighbors
- The script ‘script_nearest.m’ is for generating a plot of classification rates given the vector for k=1:5:50 for example
- No overfitting occurs since there are 7,500 training points so the data is dense thus leading to high classification rate with low k
- Highest rate: 97.3%. Better than the multi-layer perceptron network at classifying hand written digits (91%)