

CSCE822: Homework 1 Report

1. Average accuracy table:

	k=5	k=6	k=7	k=8	k=9	k=10
KNN	92.6804%	92.8866%	92.9823%	92.9897%	92.9676%	93.38733%
Random Forest	90.3019%	90.4124%	90.8468%	90.9867%	91.3549%	91.88513%

2. Test set performance table:

	KNN	Best K	Random Forest	Best K
Iteration 1	92.7835%	7	91.3598%	10
Iteration 2	93.1762%	8	91.4580%	8
Iteration 3	93.4217%	8	90.7707%	8
Iteration 4	92.4890%	10	91.6053%	10
Iteration 5	92.8817%	10	91.4089%	10
Iteration 6	92.2926%	10	91.0162%	10
Iteration 7	93.0781%	7	90.8198%	9
Iteration 8	92.7344%	10	91.8508%	8
Iteration 9	93.4708%	10	92.2435%	10
Iteration 10	93.6181%	9	91.9980%	9
Mean	92.9946%	-	91.4531%	-
Standard Deviation	0.004137	-	0.004660	-

Discussions:

1. KNN performed better than Random Forest on average.
2. The standard deviation of Random Forest is bigger than that of KNN.
3. The best test set result achieved using KNN is 93.6181% which is for k = 9, but the best test set result achieved using KNN is 92.2435% which is for k = 10.
4. Both the algorithms give the best average results for k = 10.