Table 1: TPR and FPR for Extra Trees Classifier

M	K	Nmin	TN	FN	FP	TP	TPR	FPR
15	10	2	2711	103	107	1679	0.942199776	0.037970192
15	10	**1**	2716	104	94	1686	0.941899441	0.033451957
15	10	**3**	2678	101	93	1728	0.944778568	0.033561891
15	10	**4**	2694	125	97	1684	0.93090105	0.034754568
15	**5**	2	2675	110	107	1708	0.939493949	0.038461538
15	**15**	2	2709	102	107	1682	0.942825112	0.037997159
15	**25**	2	2665	113	121	1701	0.937706725	0.043431443
10	10	2	2705	144	107	1644	0.919463087	0.038051209
20	10	2	2705	130	96	1669	0.927737632	0.034273474
25	10	2	2669	109	96	1726	0.940599455	0.034719711

Table 2: TPR and FPR for kNN Classifier

K	TN	FN	FP	TP	TPR	FPR
1	2404	444	388	1364	0.754424779	0.138968481
2	2404	396	406	1394	0.77877095	0.144483986
3	2417	422	428	1333	0.75954416	0.150439367
4	2374	441	413	1372	0.756756757	0.148188016
5	2373	458	412	1357	0.747658402	0.147935368
6	2403	476	370	1351	0.739463602	0.133429499
7	2437	467	427	1269	0.730990783	0.149092179
8	2368	511	417	1304	0.7184573	0.1497307
9	2354	520	447	1279	0.710950528	0.159585862
10	2407	487	397	1309	0.728841871	0.141583452

From my tests, changing the parameters for Extra Trees and kNN all varied the results. For Extra Trees (Table 1), changing Nmin affected the performance of the classifier. An Nmin value of 3 gave the best results, giving the smallest values of FN and FP, and the highest values of TP and TPR. Changing M also affected the classifier performance. A higher value of M seemed to give the best results. An M value of 25 gave a relatively low FP and FPR, with higher values of TP and TPR. Varying K also had an effect the classifier performance, with a value of 10 appearing to be the best. The overall combination of parameter values that resulted in the best Extra Trees classifier performance was M = 15, K = 10 and Nmin = 3. It gave a small FPR (0.033561891) and a high TPR (0.944778568).

For kNN (Table 2), changing K, the only argument, had an affect performance of the classifier. A K value of 2 seemed to have the best performance, giving the lowest value of FN and the highest values of TP and TPR. It gave a relatively small FPR (0.133429499) and a high TPR (0.77877095)

Between the kNN and Extra Trees classifiers, the Extra Trees classifier appears to be the better performing one, giving smaller values of FN, FP and FPR and higher values of TN, TP and TPR.

This comparison only determined which classifier is best between kNN and Extra Trees. There could potentially be other classifiers that perform better. Also, these classifier parameter values are likely not optimal, as only a few different parameter values were tested.