

## Assignment 5

### Random Forest Classifier with 10, 25, and 50 estimators using both gini and entropy as separators

n_estimators	criterion	average_score
10	gini	0.947353
10	entropy	0.943766
25	gini	0.952569
25	entropy	0.954339
50	gini	0.954355
50	entropy	0.957864

### Test 5, 10, 15, and 20 estimators for Random Forest with 5 splits

mean_fit_time	std_fit_time	mean_score_time	std_score_time	split3_train_score	split4_train_score	mean_train_score	std_train_score
0.017144	0.00318	0.014736	0.000637	0.971429	0.969298	0.970563	0.00566
0.016507	9.2e-05	0.014569	0.000144	0.971429	0.986842	0.980226	0.005208
0.016509	0.000846	0.014654	0.00013	0.98022	0.982456	0.981986	0.001647
0.03013	0.000758	0.014456	0.000672	0.982418	0.980263	0.982866	0.002143

### Test 25, 50, 75, and 100 iterations for Histogram Boosting with 5 splits

mean_fit_time	std_fit_time	mean_score_time	std_score_time	split3_train_score	split4_train_score	mean_train_score	std_train_score
0.130708	0.021832	0.002784	0.000354	0.989011	0.986842	0.989456	0.002557
0.342253	0.090121	0.006429	0.001742	1.0	1.0	1.0	0.0
0.388296	0.107861	0.005482	0.001272	1.0	1.0	1.0	0.0
0.346822	0.016634	0.005087	0.000409	1.0	1.0	1.0	0.0

Speed-score trade-off of tree-based ensembles

