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jcs188
ECE1395

1d.

i. training X_1 accuracy: 0.99
ii. training X_2 accuracy: 0.9244444444444444
training X_3 accuracy: 0.9244444444444444
training X_4 accuracy: 0.9133333333333333
training X_5 accuracy: 0.8933333333333333
iii. testing accuracy: 0.934

1e.

i. training X_2 accuracy: 0.9366666666666666
ii. training X_1 accuracy: 0.8866666666666667
training X_3 accuracy: 0.8911111111111111
training X_4 accuracy: 0.8622222222222222
training X_5 accuracy: 0.8744444444444445
iii. testing accuracy: 0.916

1f.

i. training X_3 accuracy: 0.9966666666666667
ii. training X_1 accuracy: 0.8888888888888888
training X_2 accuracy: 0.8933333333333333
training X_4 accuracy: 0.8633333333333333
training X_5 accuracy: 0.8677777777777778
iii. Testing accuracy: .9

1g.

i. training X_4 accuracy: 1.0
ii. training X_1 accuracy: 0.6688888888888889
training X_2 accuracy: 0.6544444444444445
training X_3 accuracy: 0.6633333333333333
training X_5 accuracy: 0.6522222222222223
iii. testing accuracy: 0.666

1h.

i. training X_5 accuracy: 1.0
ii. training X_1 accuracy: 0.8622222222222222
training X_2 accuracy: 0.88
training X_3 accuracy: 0.8811111111111111
training X_4 accuracy: 0.8755555555555555
iii. testing accuracy: 0.888

1i. majority vote accuracy: 0.906

1j.

i) Using the majority voting rule, I got a very high accuracy between all of my classifiers when using the majority voting technique because it takes the most common predicted output among each of my classifiers.

ii) All classifiers resulted in a very high training accuracy for their own training subset in which they were classified on, with some training accuracies even being perfect. Each of the other training classifiers also resulted in a fairly high accuracy on the other training subsets except for the decision tree classifier. Having a very high training accuracy may be a result of overfitting our training data which is the reason why the decision tree classifier had a very low testing accuracy and low accuracies for the other training subsets. All other classifiers resulted in a high testing accuracy. I believe the SVM would be the best classifier to use in this instance because it has the highest testing accuracy. Bagging does help because it decreases the error by decreasing the variance in the results.