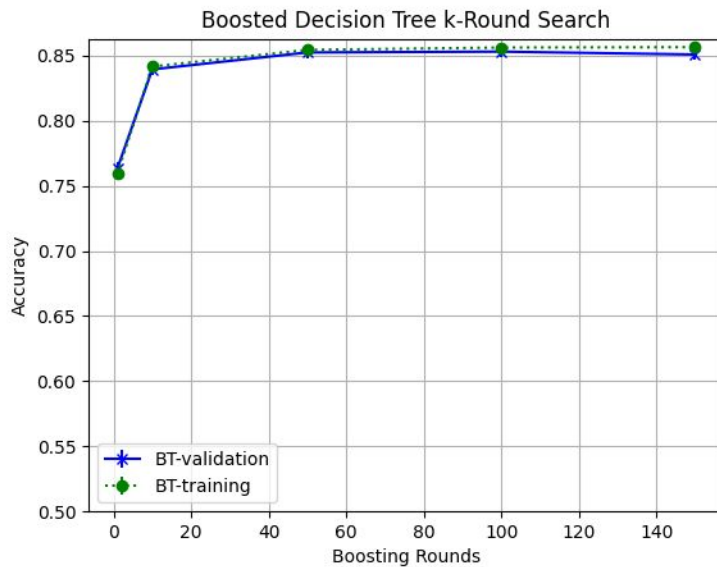


**A short writeup describing the tuning process. The bare minimum text to clearly indicate the following elements so the TA can find the required pieces and verify they were done correctly. Include at least one chart showing a parameter sweep demonstrating tuning boosted trees.**

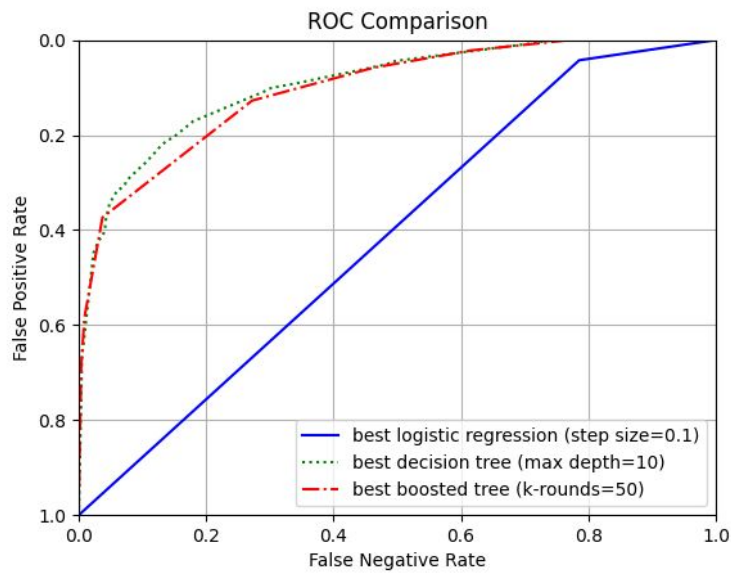


The process for all three models are as follows:

1. Build model on training set with hyperparameters (max depth for decision trees, step size for logistic regression and number of rounds for boosted trees)
2. Validate on validation set, if validation results were better than the current best model at the 75% confidence interval, that model becomes the new best model. Otherwise, if the model is better but not with 75% confidence, tie break on model complexity

We tried a range of possible values until we saw performance taper or regress. We then fine-tuned a little bit more around the current best value to see if we can get even better performance.

**Include an ROC curve of the best versions of logistic regression, decision trees, and boosted trees you found when trained on the full training set and evaluated on the test data.**



**Include the parameter settings and accuracy of those three best models -- and error bounds.**

logistic regression

step size: 0.1

accuracy: 0.7755 - 0.7854

decision tree

max depth: 10

accuracy: 0.8433 - 0.8519

boosted tree

k-rounds: 50

accuracy: 0.8481 - 0.8566