Neil Wagner

Dr. Brahma

BSAN 6070

15 March 2020

# CA04 – Ensemble Models

1. Write your observations about the Classifier's behavior with respect to the number of estimators

   The first step to creating the Random Forest model is to create two lists: one for the results and one for the estimators. The results list is created as an empty list because the results will be identified based on the model's performance after running the code. The estimator values are entered manually as 50 through 500 in increments of 50. The Random Forest Classifier takes two arguments: number of estimators and random state. The number of estimators is the number of trees, whereas the random state is manually entered as a value of 101.

2. Is there an optimal value of the estimator within the given range?

The graph shows that from a range of 0-250, the performance values decrease (starting at the maximum value of 0.8384). From range 250-300, the values increase. However, the values then decrease and return to the previous value in the next range (300-350). Lastly, from range 350-400 the value increases, then stays the same for the next increment (400-450), and then significantly increases for the final increment (range 450-500).