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**BSAN 6070 Intro to ML**

Questions:

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

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

**Random Forest**

Chart, line chart

Description automatically generated

1. The model increases with increase in n\_estimators but after 200 n\_estimators it fluctuates up and down
2. Therefore, I would say the most optimal n\_Estimator is 200.

**Adaboost**

**Chart, line chart

Description automatically generated**

1. My Adaboost model seems to remain consistent across all the n\_Estimators. There is a sharp increase between 100 and 200 n\_estimators
2. The turning point seems to be around 150 n\_estimators

**Gradient Boost**

**Chart, line chart

Description automatically generated**

1. The Gradient boost model seems to increase between 100 and 200 n\_estimators but then declines after that until 350 n\_Estimators where the model spikes up and down again
2. I would say the optimal value within the given range is around 200 n\_estimators

**Xtreme Gradient Boost**

Chart, line chart

Description automatically generated

1. The Xtreme gradient boost model seems to increase in the beginning and relatively remains the same after 250 n\_estimators
2. The optimal solution is around 200 n\_Estimators