DTSC680: Applied Machine Learning
Module 2
Assignment 2

Directions

Complete the Assignment_2.ipynb file; further directions are located in that file.

Below is a simple rubric indicating how you will be graded:

Exploring all Three Regressors 15%
Were you able to explore using the GradientBoostingRegressor, RandomForestRegressor, and DecisionTreeRegressor to fit the data? Do the final model parameters that you selected for these regressors yield models that fit the data well?

Perform Grid Searches 30%
Were you able to successfully perform a series of grid searches to elucidate the optimal model hyperparameters for all three models? Did you use successive rounds of grid searching to hone-in on the correct values?

Visualize Optimal Model Predictions 20%
Were you able to successfully visualize each model's predictions for the training data?

Compute Generalization Error 5%
Were you able to successfully compute the generalization error for all three models?

Critical Analysis 25%
Were you able to explain how these algorithms work in your own words? Were you able to characterize the trends you observed in the prediction results? Did you discuss any connection you may observe between the algorithm and the results?

Final Model Selection and Justification 5%
All things considered, what model do you think will best generalize and why? Justify your answer.