INFO 6105
Data Science Engineering Methods and Tools
Beat the Bot
Assignment 4 (Optional)

Professor: Nik Bear Brown

Due April 13, 2019

In this assignment, you can get a max score of 90%. It is intended as a make-up assignment.

The assignment must be done individually.

This is an optional assignment. Your best three of four assignment scores will be used.

Beat the Bot

Find a dataset that is approved by the TAs, that can be used for regression or classification. That can run in H2O automl. Run it in H2O automl and get a leaderboard. For metrics, you must use residual deviance for regression, AUC for binary classification and logloss for multi-class classification.

You must base your score on running H2O automl for at least 1000 seconds. If H2O automl fails or doesn't generate at least three models you must use another dataset.

Using tools other than H2O automl, try to beat the automl score. The grade is directly dependent on how well or worse you do.

Report

1) Students will provide a summary on each dataset they process about whether or not they beat the bot. Explain the reasoning you used to "beat the bot."
2) Where did it beat it? Where it failed, and if failed why? What piece was missing in automl which caused it to get beat?

Scoring Rubric

- o   Model (50 points) Th score is a half-step percentage above or below the bot with a base of 40. This means if you equal the bot you are 0% above and get a score of 40. 10% above the bot gets ten half-steps or plus 5 points for a score of 45. 20% or more above the bot gets the full score of 50. 10% below the bot gets ten half-steps below or minus 5 points for a score of 35. Etc.
- o   Report (40 points) Your report must have these four aspects
  1. Working, understandable code (10 points)
  2. Provide a summary on the process as to how they "beat the bot." (10 points)

3. How did you beat it, here's where it failed, and if failed why? What piece was missing in the bot that caused it to get beat? (10 points)
4. Professionalism (Licenses, running notebooks, etc.) (10 points)

Submission of Assignments

Your submission should be a zip file with all of the required work. You will submit your assignments via BlackBoard. Click the title of assignment (blackboard -> assignment -> <Title of Assignment>), to go to the submission page. You will know your score on an assignment, project or test via BlackBoard. BlackBoard represents only the raw scores. Not normalized or curved grades.