Economics 187: Project 2
Spring 2022, UCLA
Instructor: Dr. Rojas

Due Date: May 12, 2022 by 5:00PM (PST)

For this project you will need to use two different datasets (or one that allows for classification and regression) of your choice. Please make sure to have as many predictors as possible (e.g., 10s or 100s) as well as observations.

1. (50%) Non-Linear Models: Fit the following models to your data:

   - Piecewise Polynomial
   - Splines
   - GAM

   Based on your fits, identify the best model taking into consideration the bias-variance tradeoff. Make sure to discuss your results (including plots and tables), and to use CV and/or bootstrap to evaluate your models' performance.

2. (50%) Tree-Based Models: Fit the following models to your data:

   - Regression Tree
   - Classification Tree
   - Random Forest
   - Boosting

   Based on your fits, identify the best model taking into consideration the bias-variance tradeoff. Make sure to discuss your results (including plots and tables), and to use CV and/or bootstrap to evaluate your models' performance.