PLSC 497: Final Research Report

Forecasting political change events

No late research reports accepted. I cannot say this any more loudly:

NO LATE RESEARCH REPORTS ACCEPTED.

Object: Pick one of the two datasets: `coupdata.csv` or `demcollapsedata.csv`. The goal of your final project is to model a political change event. If you choose the coup data, pick **one of three outcomes**: (a) irregular leader exit; (b) coup attempt; OR (c) regime collapse. If you choose the democracy data, the outcome is: `demcollapse`.

Details: Use iterated k-fold cross-validation method with a logistic classifer and the AUC-PR performance metric to assess a "best" model for predictive performance. With this "best" model produce forecasts for the final year of the data set.

Grading: Be sure you write code and include in your research report the following components: (a) calculate the baseline probability of the outcome; (b) plot the distribution of the outcome; (c) attempt to test at least (5) **five** different model formulas to find the "best" one; (d) be sure to address skew in the distribution of any predictor variables by correctly transforming the variable (e.g. square root or natural log); (e) include a table reporting the model formulas + AUC-PR values for each model forumla you test; (f) be sure to subset the data so that you conduct iterated cross-validation for data up to the final year in the data set but NOT including this final year; (g) plot the forecasts for the final year in the data set, by country. As always, make sure each plot is labeled correctly and that the text of your report describes each plot correctly (axis labels as well as the main pattern and the main "take-home-point" from looking at the plot). Please use Latex to write up your final research report.

CANVAS uploads due Monday 11:30pm April 29. Office hours for Faith: 2pm-3pm Thursday and Friday 11am-12noon. The TA and professor are both available via email. No late assignments accepted.