Abstract

The purpose of this course project is to predict the votes of Supreme Court Justices using oral argument transcripts. Each transcript contains the petitioner’s oral argument and the respondent’s oral argument. As the petitioner and respondent present their cases, the justices ask questions. Using text from the Justices’ comments and questions, we are able to provide predictions as to how the Justices will vote.

Dataset

- Oral Argument Transcripts: Transcripts obtained from the Oyez Project hosted by the HT Chicago-Kent College of Law at oyez.org.
- Justice Vote Counts: Vote counts from the Supreme Court Database maintained at scdb.wustl.edu by Washington University, St. Louis.
- We gathered data for 3,524 cases.

Analysis

Figure: For each case, we divide the transcript into arguments on behalf of the petitioner’s argument and the respondent’s argument. We then tokenize the data for each of the nine Justices separately.

- We created a binary data matrix for each of the nine Justices with a row for each token and two columns for each court case, one for the petitioner’s argument and one for the respondent’s argument.
- For each Justice there is ~30K uni-grams and we chose ~48K bi-grams with the highest mutual information.
- We used logistic regression to train a model from the data.
- For testing, we compare scores for petitioner and respondent to create case prediction, and we used a 10-fold cross validation.

Predictions

- Predicting case outcomes is best accomplished by predicting each Justice’s vote.
- Prediction is dramatically improved by tokenizing Justice’s separately.

Lessons Learned

- Predicting case outcomes is best accomplished by predicting each Justice’s vote.
- Prediction is dramatically improved by tokenizing Justice’s separately.

AUC: 89.1%
    False positive rate: 2.9%
    False negative rate: 15.5%
    True positive rate: 84.5%
    True negative rate: 97.1%
    Accuracy: 88.7%
    F1: 90.9%

Shelby County v. Holder (Voting Rights Act)
Uphold Voting Rights Act
Strike Down Voting Rights Act

Hollingsworth v. Perry (Gay Marriage)
Allow Gay Marriage
Allow Prop. 8 to Stand

Fisher v. University of Texas (Affirmative Action)
Allow Consideration of Race in Admissions Decisions
Ban Consideration of Race in Admissions Decisions