Did Trump Affect Candidates in 2018?

By Chris Shaw

Data Science Question

Using the Partisan Voting Index, Congressional District 'Elasticity', Gender and agreement with Trump's legislative agenda:

Can we predict the margin of victory for candidates in the 2018 election?

Data Collection

- **Trump Agreement Score**
  (Based on bills voted for or against in the 115th Congress)
- **‘Elasticity’ Score**
  (“how sensitive it is to changes in the national political environment”)
- **‘Partisan Voting Index’**
  (From Cook Political Report - “measures how much more Democratic or Republican a district voted relative to the national result)

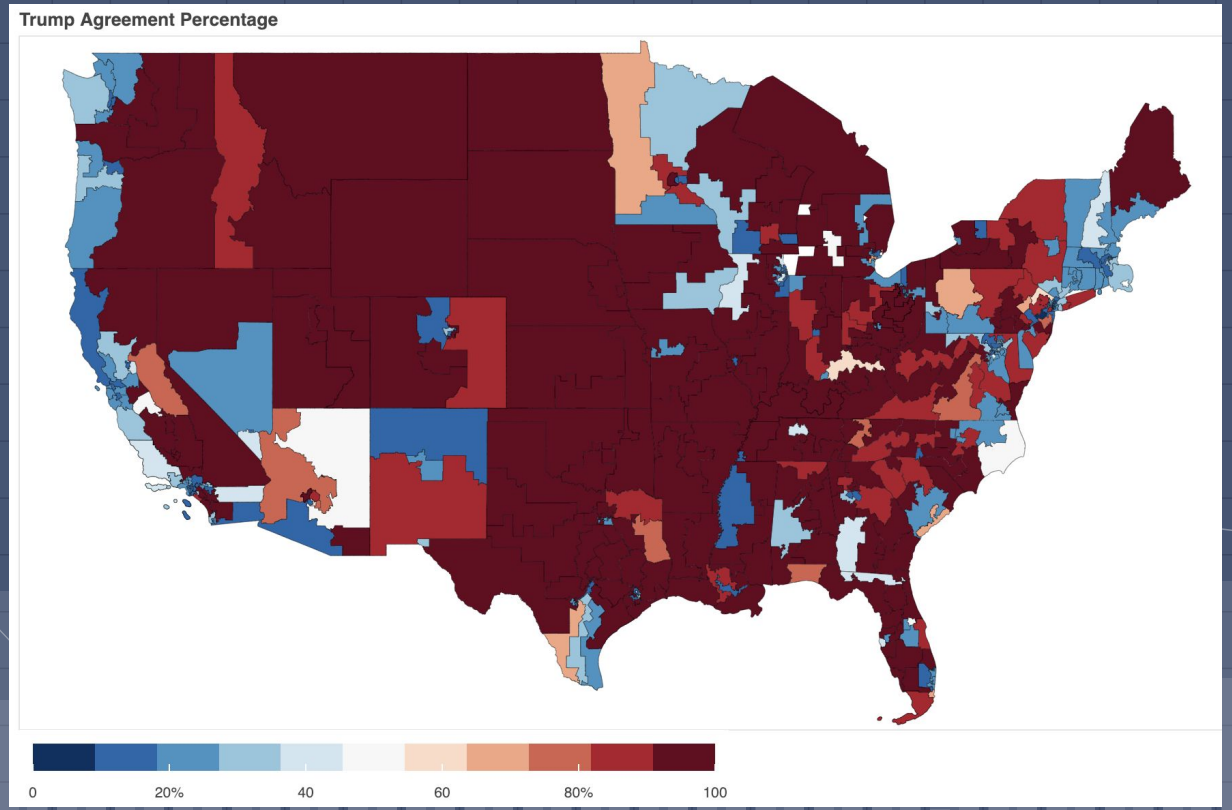
Data Collection

- **2018 Election Results**
  (Via Ycombinator post)
- **116th Congressional District Shapefiles**

Exploratory Data Analysis

- **No Null Values in any of the 538 Datasets**
- **12 Districts have had two representatives in the 115th Congress**
- **Missing 23 districts in 2018 data**
  (Iowa, Indiana, Kansas, Kentucky)
- **Non-standard naming of districts across datasets**

Visualization



Modeling

Linear Regression

```
Train Score:  0.8554755313038775
Test Score:  0.8438936206372467
```

Random Forest Regressor

```
Train Score:  0.868676248564896
Test Score:  0.8538728567693152
```

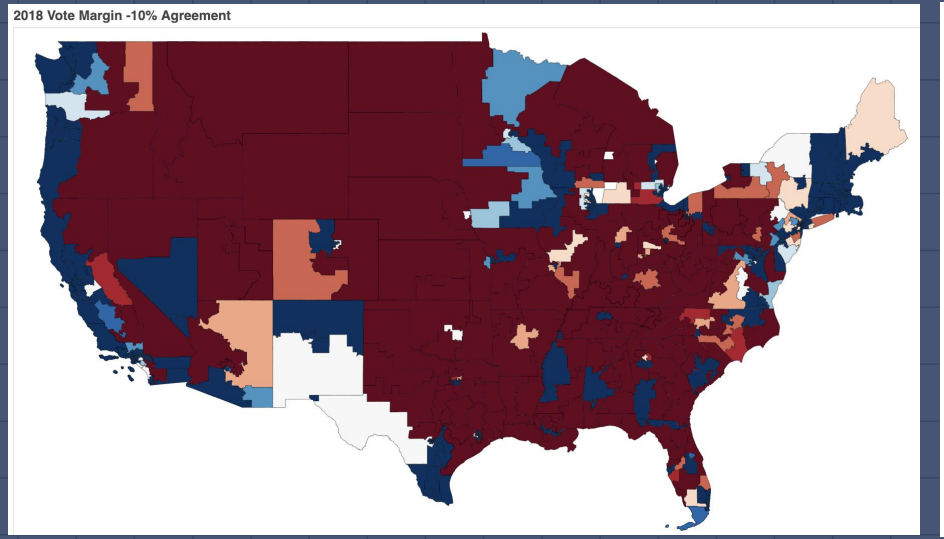
Sklearn modules, Standard Scaler and Train/Test split

Analysis

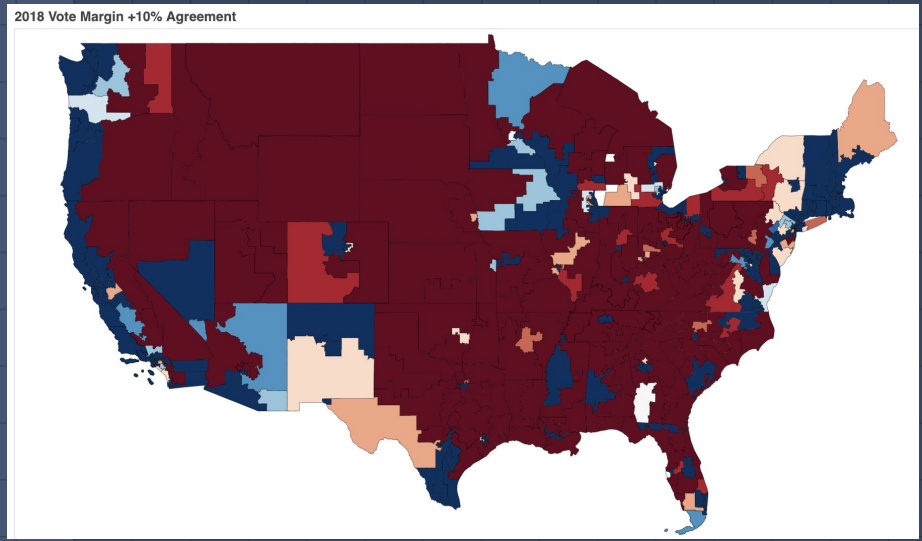
- By far the most important feature was partisan voting index
- The mean and median predicted margin of victory for any increase or decrease of trump agreeableness were virtually identical

```
[('115agree_pct', 0.1919978540874326),
 ('elasticity', 0.009199391883898525),
 ('pvi_538', 0.7958235517835901),
 ('116gender', 0.002979202245078 6)]
```

-10% Agreement



+10% Agreement



Works Cited

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https://koordinates.com/layer/96077-us-116th-congressional-districts/

Questions?