Party Tweets

By: JE Consulting
For: Trace Political, LLC

The Data

- ❖ House of Representatives
- ❖ 211 Democrats
- ❖ 222 Republicans
- ❖ Roughly ~86k Tweets
  - ➤ 443,138 Democrat Words
  - ➤ 457,293 Republican Words
- ❖ May 2018

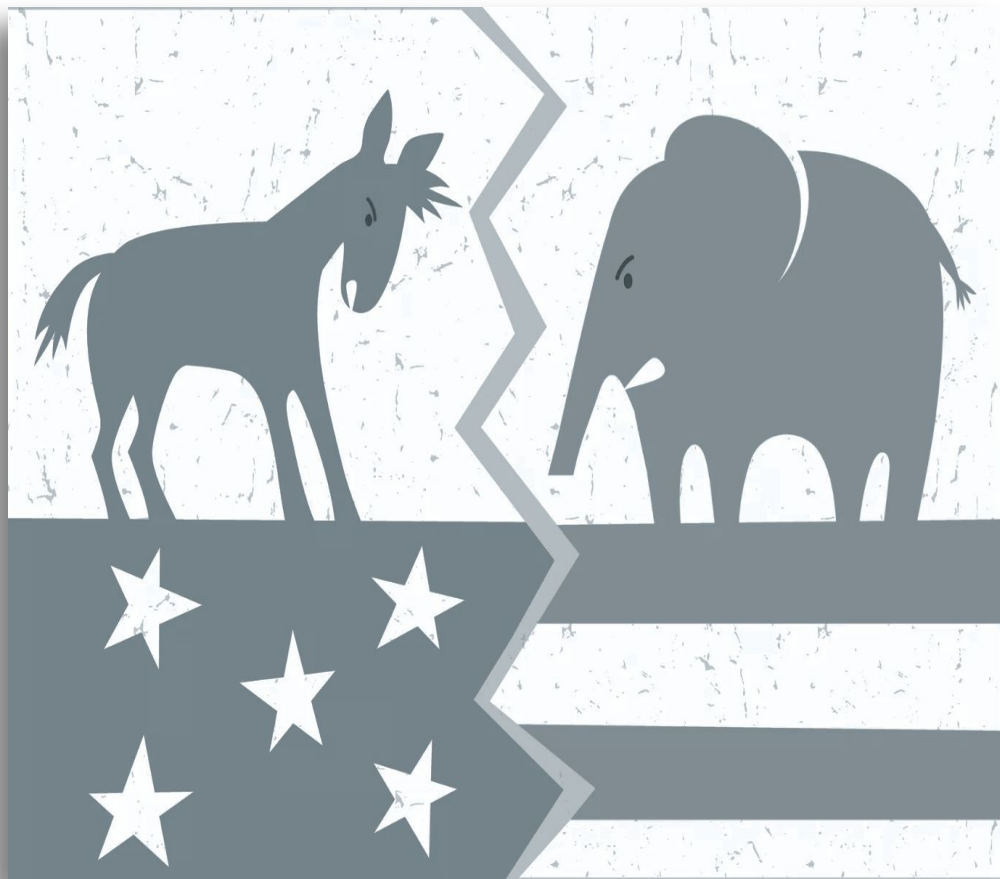# The Objectives

Part One

Extract
- Number of Tweets By Party
- Common Words by Party
- Vocab Length
- Semantic Relationships
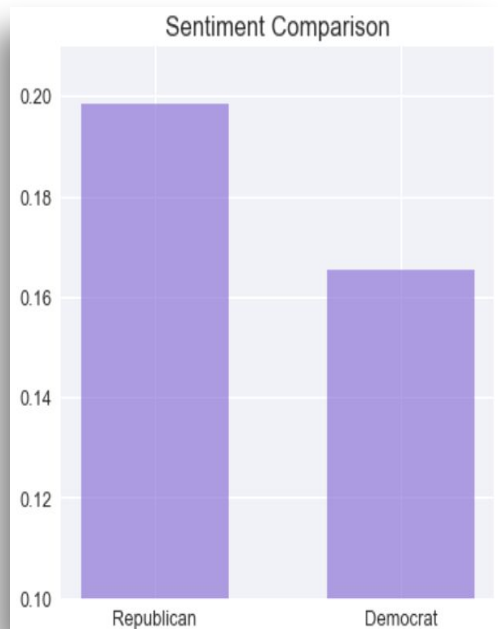- Sentiment Analysis

Part Two

Modeling
- Party Classification Neural Networks (LSTM, GRU)
- Testing Accuracy > 90%
- No Overfitting!

The Highlights - Part One

Sentiment Comparison

Top Words:

Democrats
1. Today
2. Trump
3. American

Republicans
1. Today
2. Tax
3. Great

Total Vocab:
Democrats: 35,462
Republicans: 33,086

Sentiment Score:
Democrats: .16
Republicans: .19

Democrats

Word	Frequency
today	3850
trump	2502
american	2053
year	1835
thank	1777
family	1694
great	1676
student	1660
day	1571
congress	1518

Republicans

Word	Frequency
today	4883
tax	2885
great	2876
house	2382
bill	2379
american	2241
thank	2118
year	1961
day	1887
act	1820

The Highlights - Part One cont.
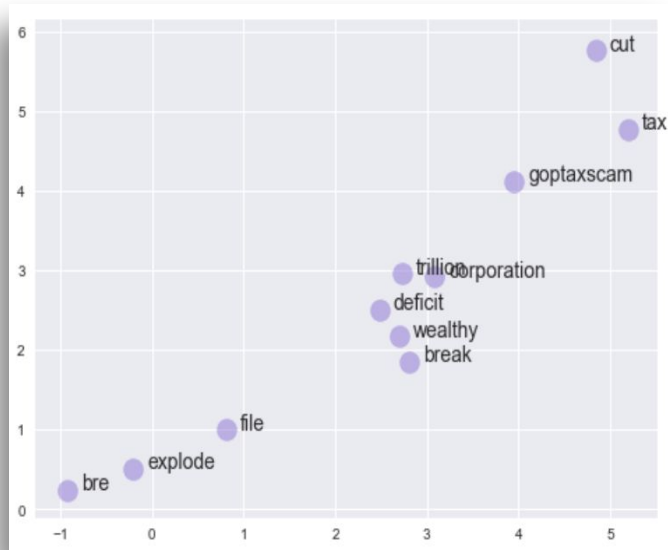
Similar Words: *'Tax'*

Democrats:
- GOPtaxscam
- Corporation
- Wealthy
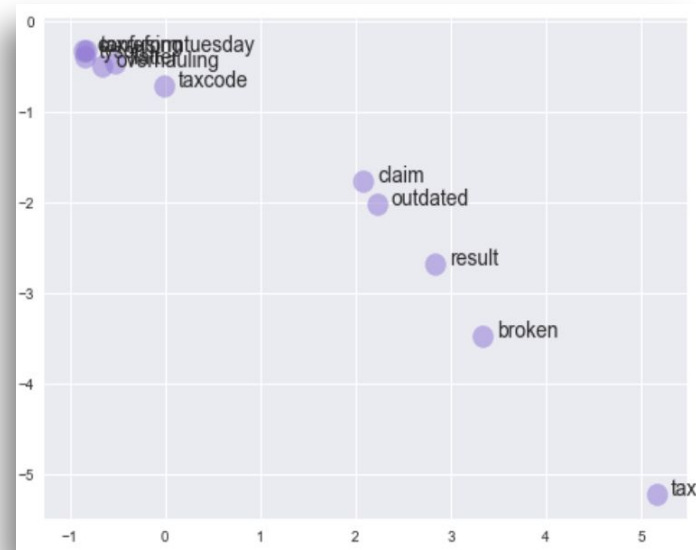- Trillion
- Deficit
- Explode

Republicans:
- Broken
- Outdated
- Taxreformtuesday
- Confusing
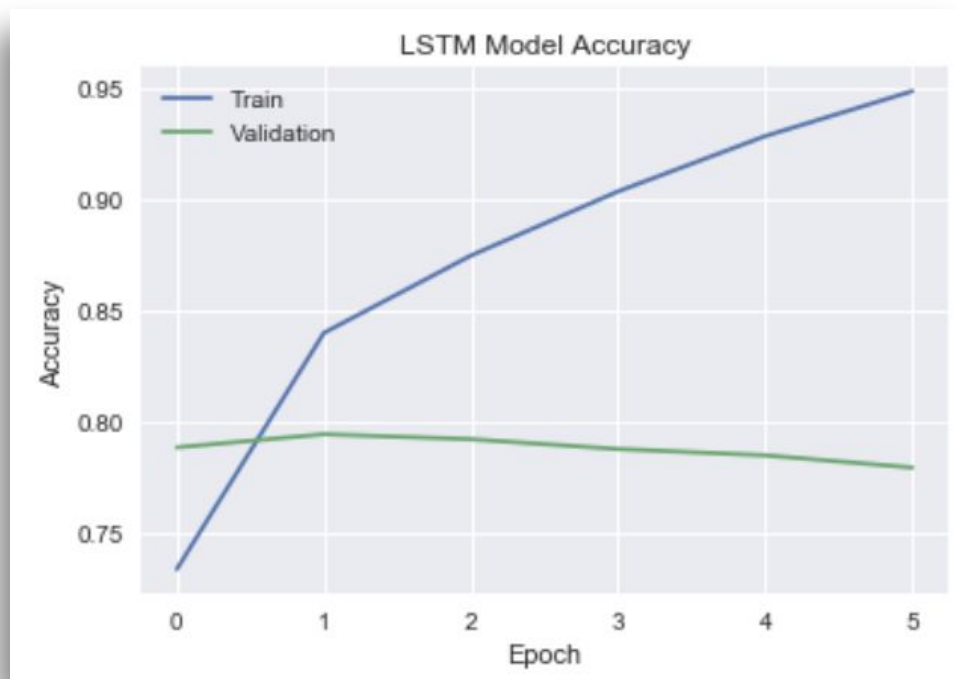- Overhauling
- Flatter

Democrats

Republicans

The Results - Part Two
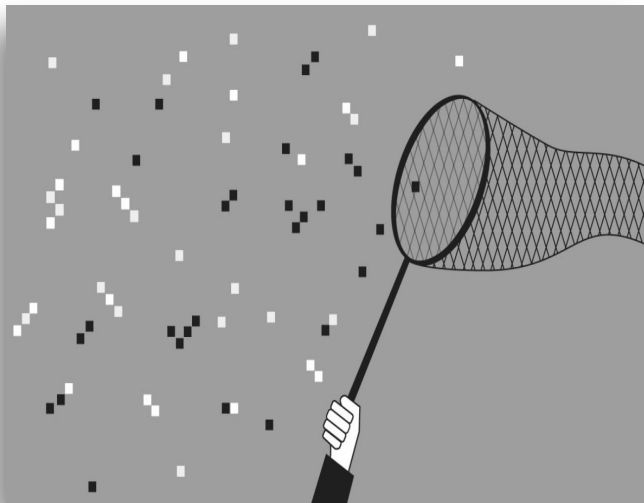
Training Accuracy: 91%
Testing Accuracy: 78%

Clear Overfitting

Not Enough Data!

LSTM Model Accuracy

The Recommendations - Part Two

More Data!

- Other Sources of Data

Data Cleaning Experimentation

Hyperparameter Experimentation

Develop Relevant Use Case

- Decide If More Experimentation Necessary

The End.
Questions?