

# Classifying the Bias and Message of Political Social Media Posts

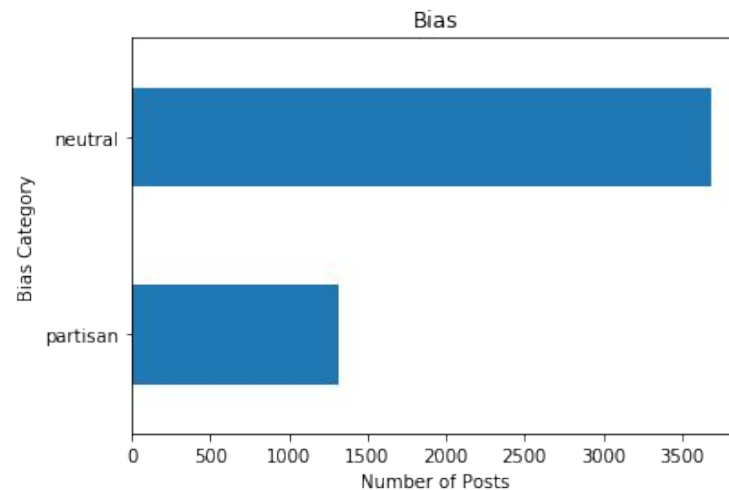
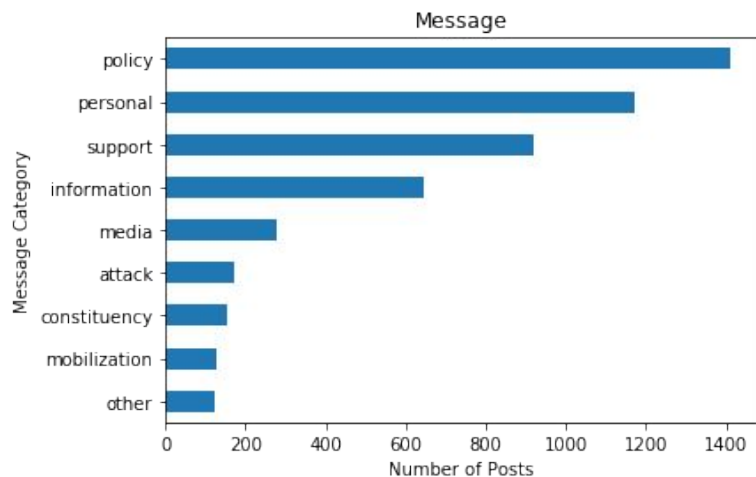


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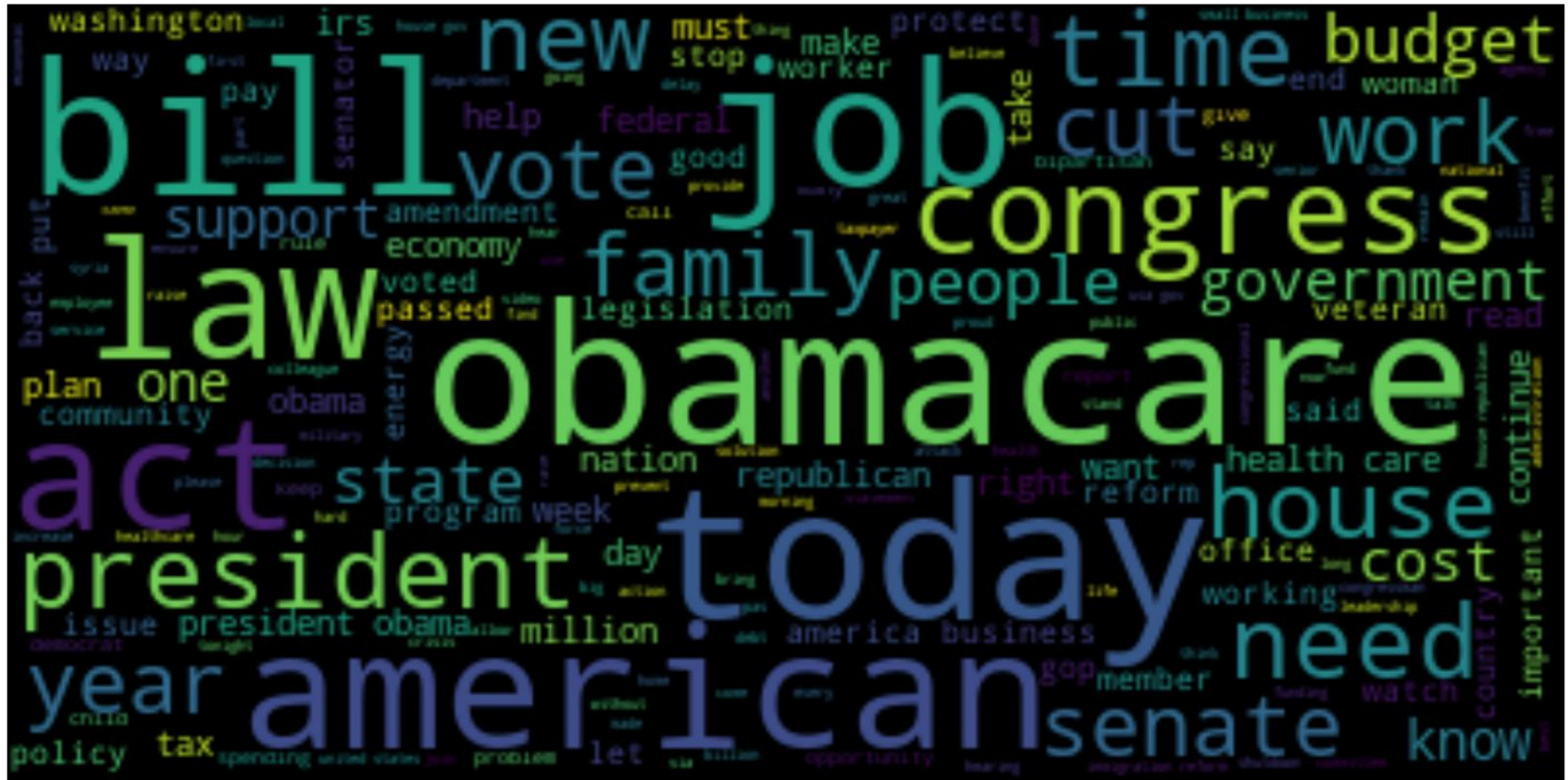
# The Data

- Originally provided by the [Data For Everyone Library](#) on [Crowdfunder](#), accessed through Kaggle
- Twitter and Facebook posts of politicians from 2015
- 5000 posts with 20 labels
- Human-labeled bias and message columns:
  - Bias is partisan/non-partisan
  - Examples of message categories: attack, policy, constituency, information

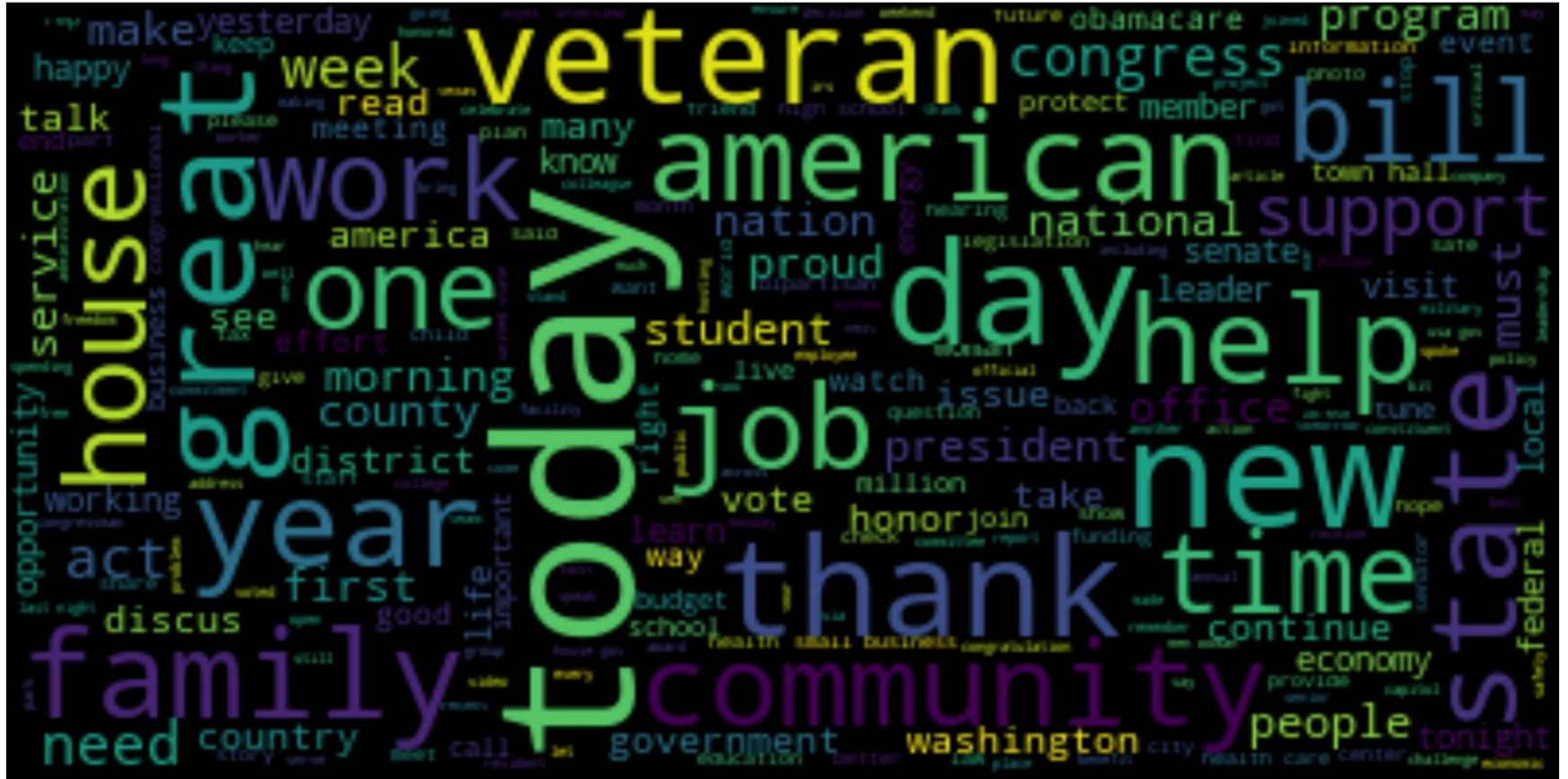
# Value Counts for Message and Bias



## Partisan Word Cloud

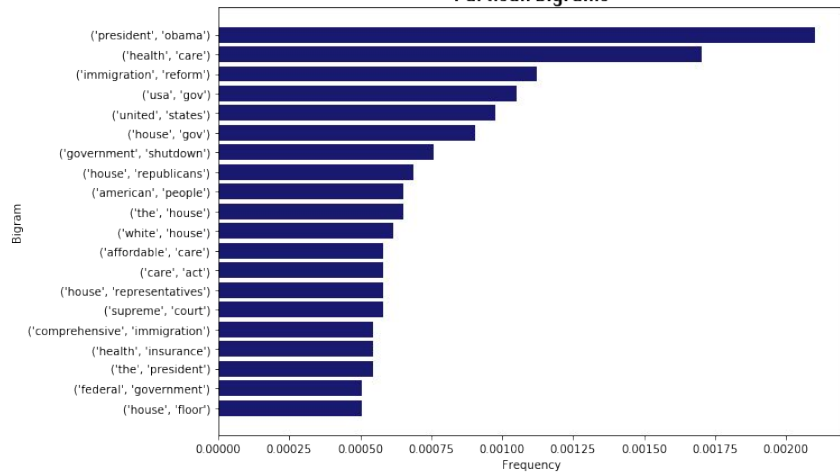


## Neutral Word Cloud

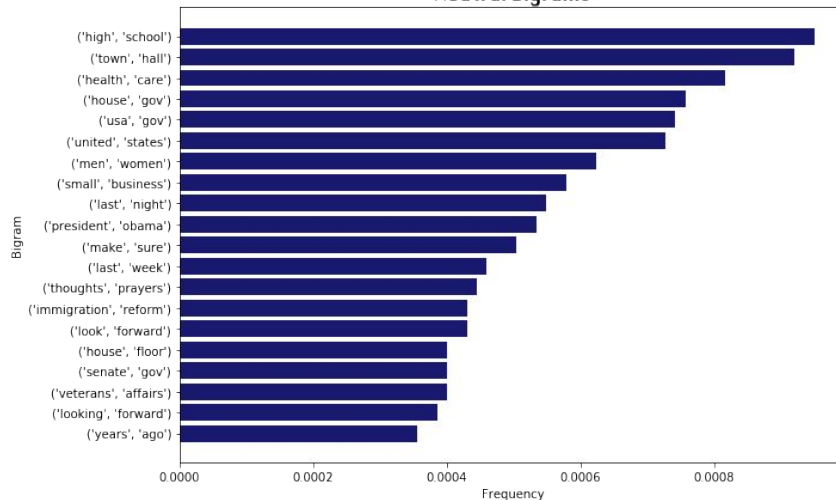


# Most Common Word Pairings

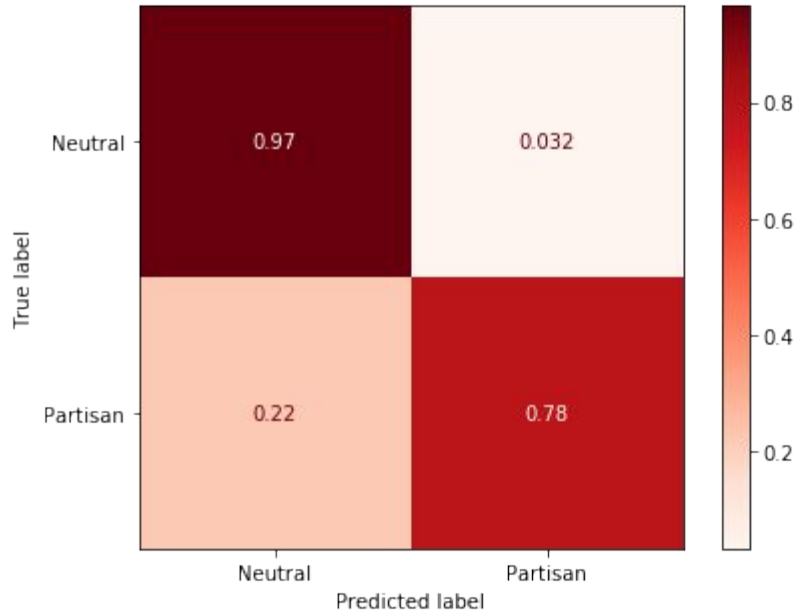
## Partisan Bigrams



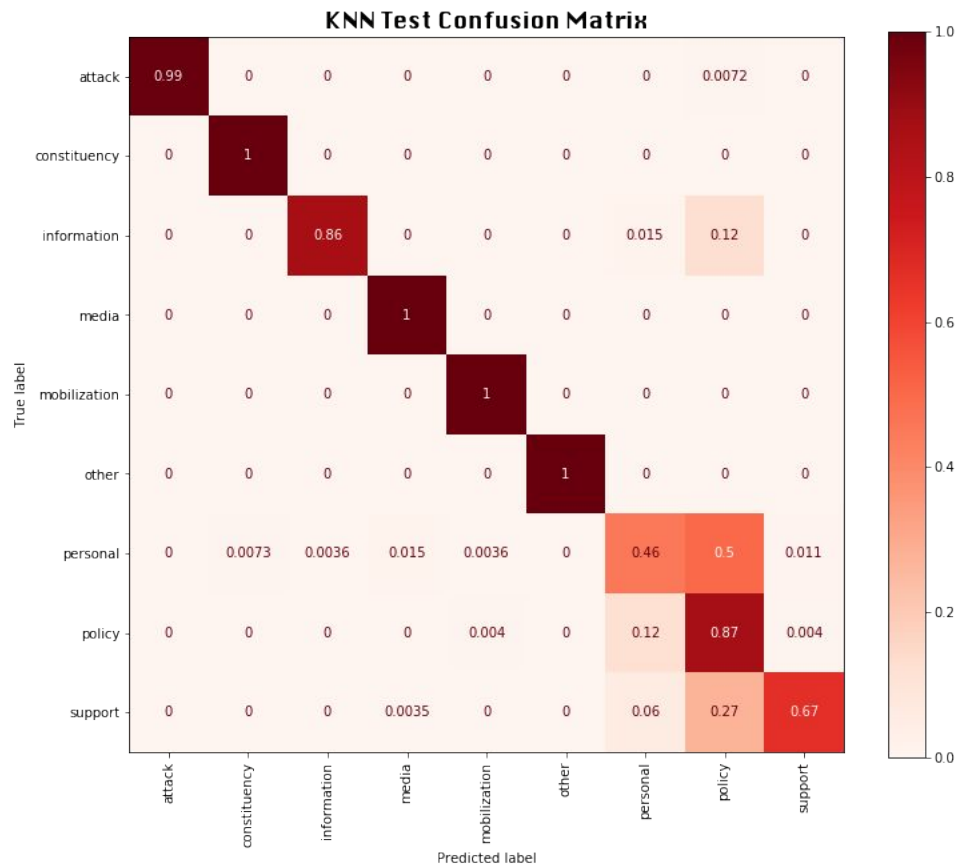
## Neutral Bigrams



**Random Forest Test Confusion Matrix**



- 91% accuracy
- Took more samples of partisan posts to improve model performance



- 87% accuracy (vs 11% with random guessing on a balanced dataset)
- Took equal samples of each message type to improve model performance



# Recommendations

- To obtain posts that can inform readers on a politician's partisan views, use the Random Forest classifier to label and filter out neutral posts.
- The KNN model correctly classified a high number of posts that address a politician's constituency, so this model can best be used for obtaining posts in that category.
- Use search terms that relate to specific laws and policies when attempting to identify partisan posts.

# Questions for Future Work

- How does this data compare to more recent posts by politicians?
- How accurately can the models predict the bias and message of political posts by those who don't hold public office?
- How does the message and bias of political posts vary, if at all, across different social media platforms?



Thank you!



# Appendix: Sample Predictions

## Donald Trump Information Tweets:

RT @IvankaTrump: Yesterday @realDonaldTrump granted Duke Tanner clemency after 16 years in prison.

Duke was sentenced to life in prison fo...

RT @realDonaldTrump: Judiciary Committee approves Judge Barrett. Moves to full Senate for final vote. Big day for America!

## Joe Biden Partisan Tweets:

Jill and I are keeping the French people in our prayers following the horrific terror attack in Nice – which targeted innocent s in a house of worship. A Biden-Harris administration will work with our allies and partners to prevent extremist violence in all forms.

GDP rose last quarter, but visits to food banks haven't slowed, and poverty has grown. We're on track for the worst economic downturn in over 70 years, and Donald Trump is on track to be the first president since Herbert Hoover to leave office with less jobs than when he came in.