

# Republican v. Democrat

Subreddit NLP Analysis

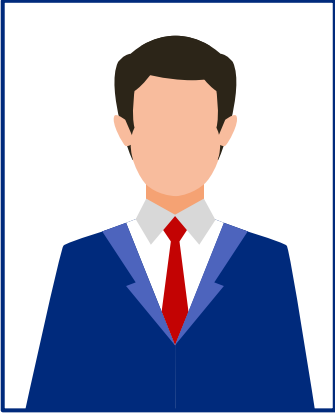


# Agenda

- Introduction & Problem Statement
- Data Summary
- Exploratory Data Analysis
- Classification Model Results

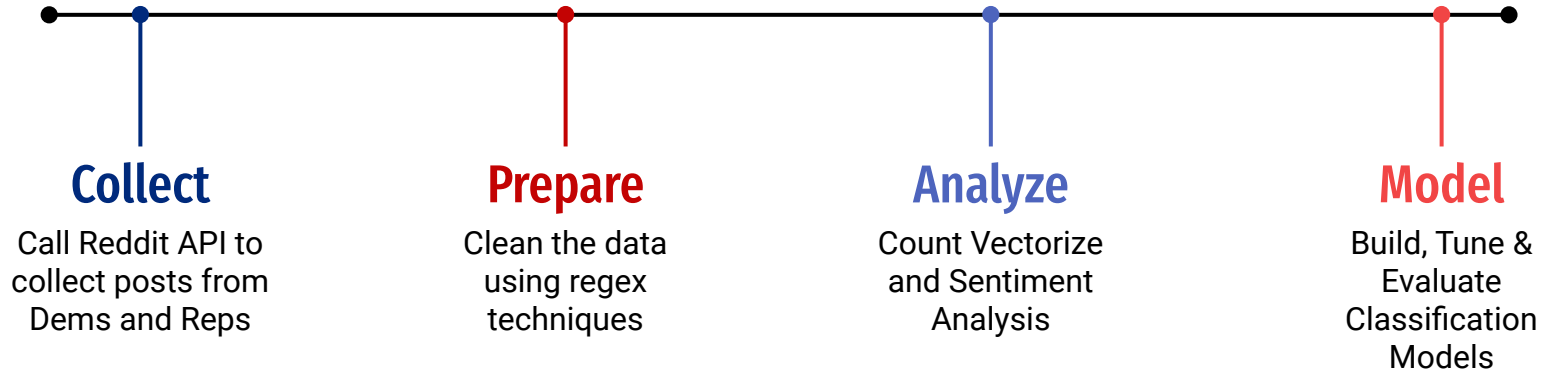


# Introduction & Problem Statement



I am a Data Scientist for the 2024 Presidential Campaign. My role is to collect and analyze data in order to identify what topics Democrats and Republicans are most concerned with so that we can formulate a winning campaign strategy.

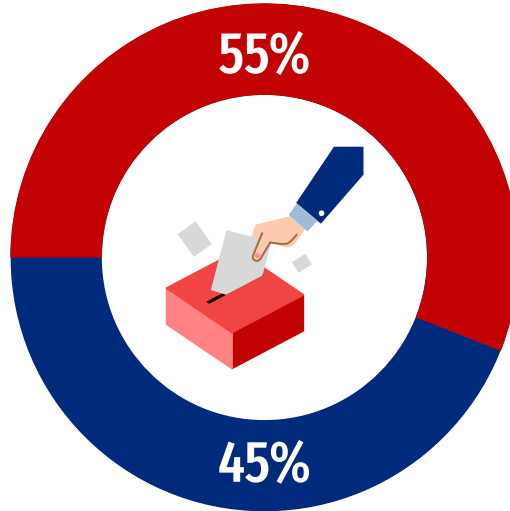
We would also like to build a model that can identify whether someone is Democrat or Republican based on posts that they make to social media platforms such as Reddit.



# Data Summary

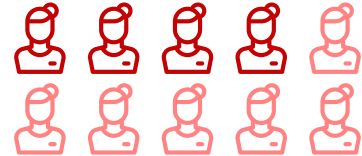
## Democrat

Subscribers: 429k  
Submissions: 9989  
Posts: 3408  
Avg Word Count: 15  
Unique Authors: 591



## Republican

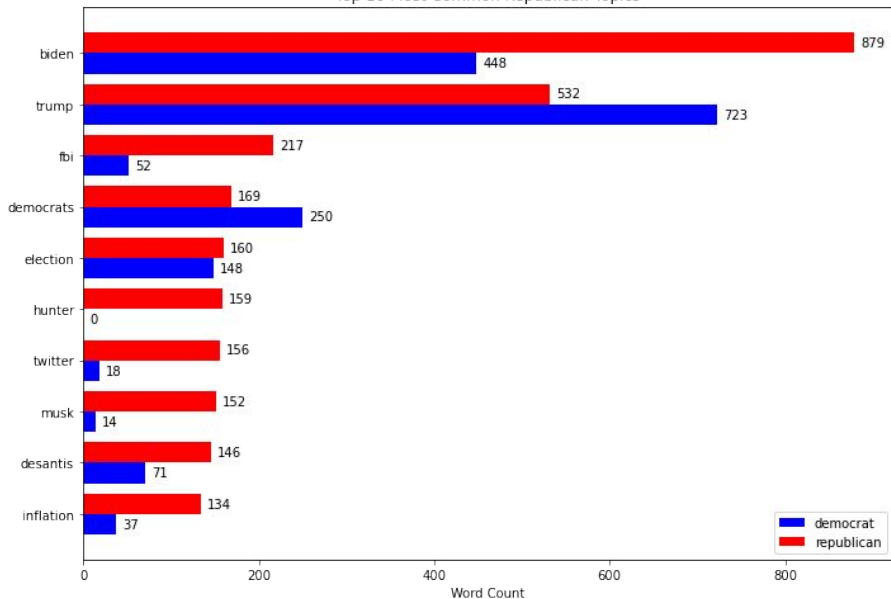
Subscribers: 182k  
Submissions: 9999  
Posts: 4173  
Avg Word Count: 15  
Unique Authors: 431



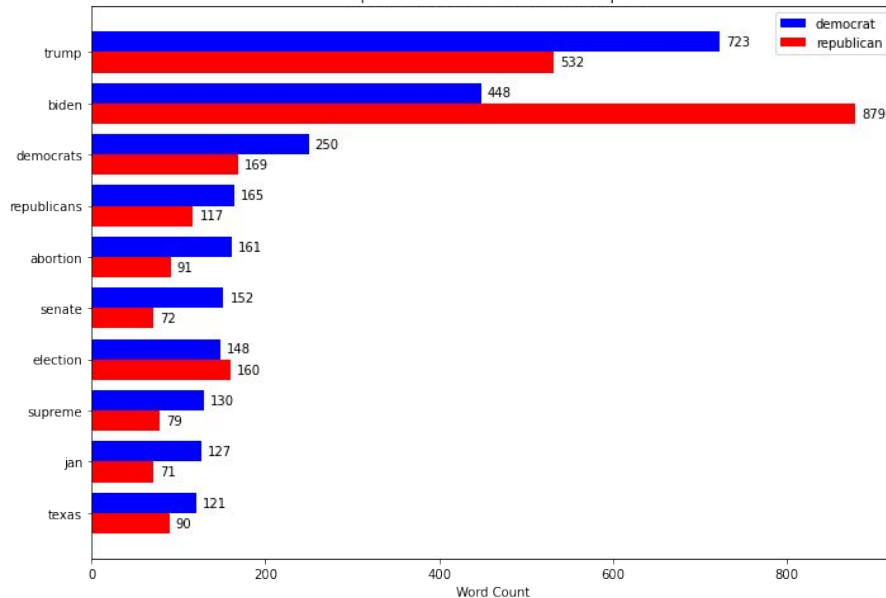
# Most Popular Topics

**Key Takeaway:** There is a lot of overlap between what Democrats and Republicans are talking about which will make classifying between these groups quite challenging.

Top 10 Most Common Republican Topics



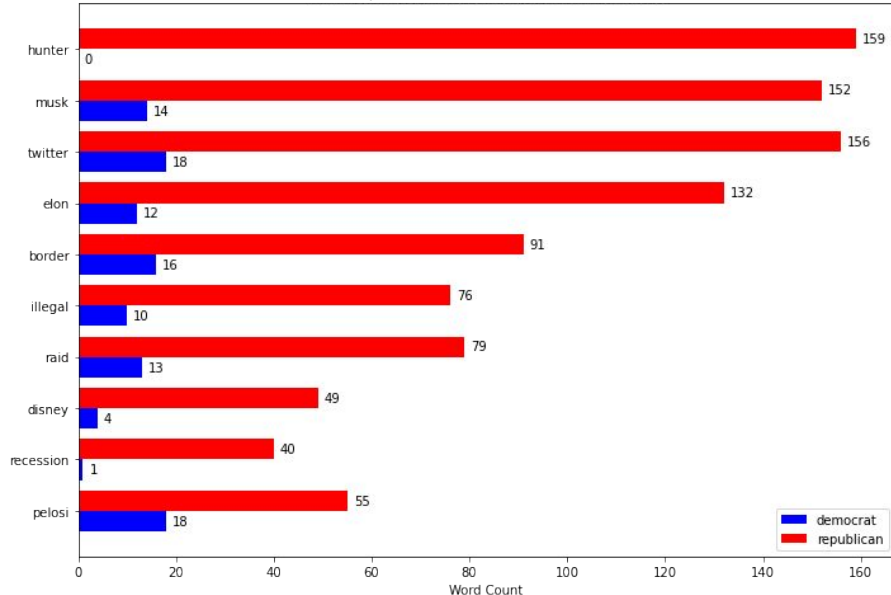
Top 10 Most Common Democrat Topics



# Republicans

**Key Takeaway:** If we win the primary it may be advantageous to identify which issues one party is concerned with that the other doesn't care much about. We can play to these topics in order to target voters from the otherside without losing our base.

What Republicans Talk about that Dems Do Not



r/Republican · Posted by u/saurin212 6 months ago

Woke Disney: 10 families who are swearing off Disney due to its left-leaning politics

[foxnews.com/lifest...](https://foxnews.com/lifest...)

92 upvotes 25 comments 0 awards

r/Republican · Posted by u/gunsoverbutter 6 months ago

Disney vs DeSantis



r/Republican · Posted by u/intelligentreviews 10 days ago

'Financial markets are throwing in the towel': Recession fears escalate as Fed slams brakes on the economy

[marketwatch.com/story/...](https://marketwatch.com/story/...)

r/Republican · Posted by u/tbburns2017 6 days ago

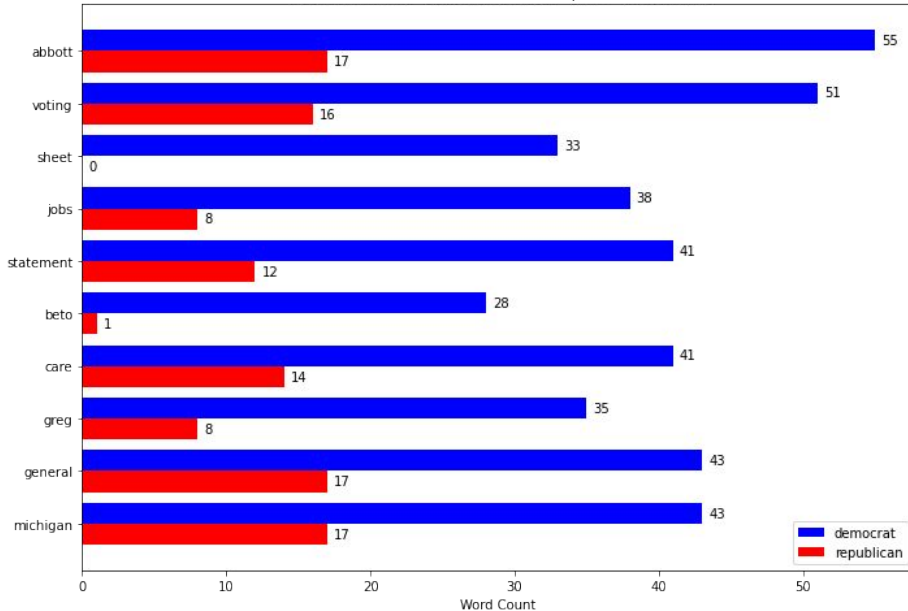
Democratic Rep Excoriates Pelosi For Not Passing Bill Banning Stock Trading

[tampaftp.com/democr...](https://tampaftp.com/democr...)



# Democrats

What Democrats Talk about that Republicans Do Not



r/democrats · Posted by u/1000000students 11 days ago

**Article** Gov. Greg Abbott said Texas' strict abortion law would 'eliminate all rapists.' But clinics say the number of rape cases has been 'consistently high': report  
[businessinsider.com/texas-...](https://www.businessinsider.com/texas-abortion-law-2022-10)



451 upvotes 48 comments 0 awards

r/democrats · Posted by u/gotostep2 2 months ago

**article** Texas Gov. Abbott sent more than 5,100 migrants to Washington. Now, DC mayor says her city is at a 'tipping point'  
[cnn.com/2022/09/...](https://www.cnn.com/2022/09/29/politics/abbott-migrants-dc/index.html)



r/democrats · Posted by u/realplayer16 2 months ago

**Article** Biden signs Democrats' \$740 billion tax, climate and health care bill into law  
[axios.com/2022/09/...](https://www.axios.com/2022/09/21/biden-signs-bill)



592 upvotes 34 comments 2 awards

r/democrats · Posted by u/ManchiBoy 18 days ago

**article** If you care about your country and your rights, don't vote for any Republicans in 2022  
[usatoday.com/story/...](https://www.usatoday.com/story/news/politics/elections/2022/10/18/dont-vote-republicans-2022/10111111000/)



1.1k upvotes 75 comments 0 awards

# Model Evaluation

|        | train_scores | test_scores | diff     | baseline |
|--------|--------------|-------------|----------|----------|
| logreg | 0.919789     | 0.716245    | 0.203544 | 0.55     |
| rf     | 0.998065     | 0.747363    | 0.250702 | 0.55     |
| ada    | 0.777485     | 0.685127    | 0.092358 | 0.55     |
| gb     | 0.875462     | 0.698840    | 0.176622 | 0.55     |
| stack  | 0.992612     | 0.733122    | 0.259490 | 0.55     |



|        | sensitivity | specificity |
|--------|-------------|-------------|
| logreg | 0.743295    | 0.683099    |
| rf     | 0.792146    | 0.692488    |
| ada    | 0.768199    | 0.583333    |
| gb     | 0.774904    | 0.605634    |
| stack  | 0.771073    | 0.686620    |



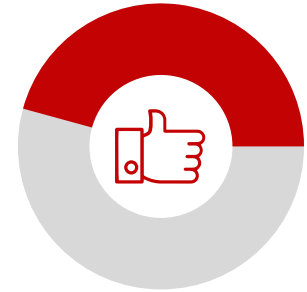


# Conclusions



## Campaign Topics

- Top of Mind
- Overlapping
- Differing



## Party Classifier

- Random Forest
- 75% Accuracy
- 79% Sensitivity