

# Detecting Fringe Investment Advice



A helpful tool for fiduciaries and investors alike to avoid Reddit's  
r/WallStreetBets and bad advice.

# Detecting Fringe Advice: Background

History: 2020 saw the rise of the “MemeTrader” based almost entirely on the ‘advice’ of a few very vocal participants in the subreddit r/WallStreetBets. Some users who followed suit self-reported large financial gains.

Today: Most others who attempted to catch the wave of hype ended up losing a lot of their equity. Fueled by greed, they watched as their life’s savings evaporated.

**A solution:** I am to help advisors and individual investors avoid making poor decisions.

# Detecting Fringe Advice: The Question

Can natural language processing (NLP) techniques help advisors and individual investors identify if a web clipping is more or less likely to be from r/WallStreetBets?

# Detecting Fringe Advice: The Answer

YES.\*\*

We can do that with NLP.

\*\**Caveat*: !!! r/WallStreetBets = Very Bad. & r/Stocks = ~~Good~~. Less Very Bad.

\*\**Bonus*\*\**: You can use this tool even if you are a diamond-handed ape riding a rocket ship to the moon.*

Translation: you can now be an even lazier meme trader.

Note: The views expressed in this presentation are mine. Past performance is no guarantee for future results.

# Detecting Fringe Advice: set up.

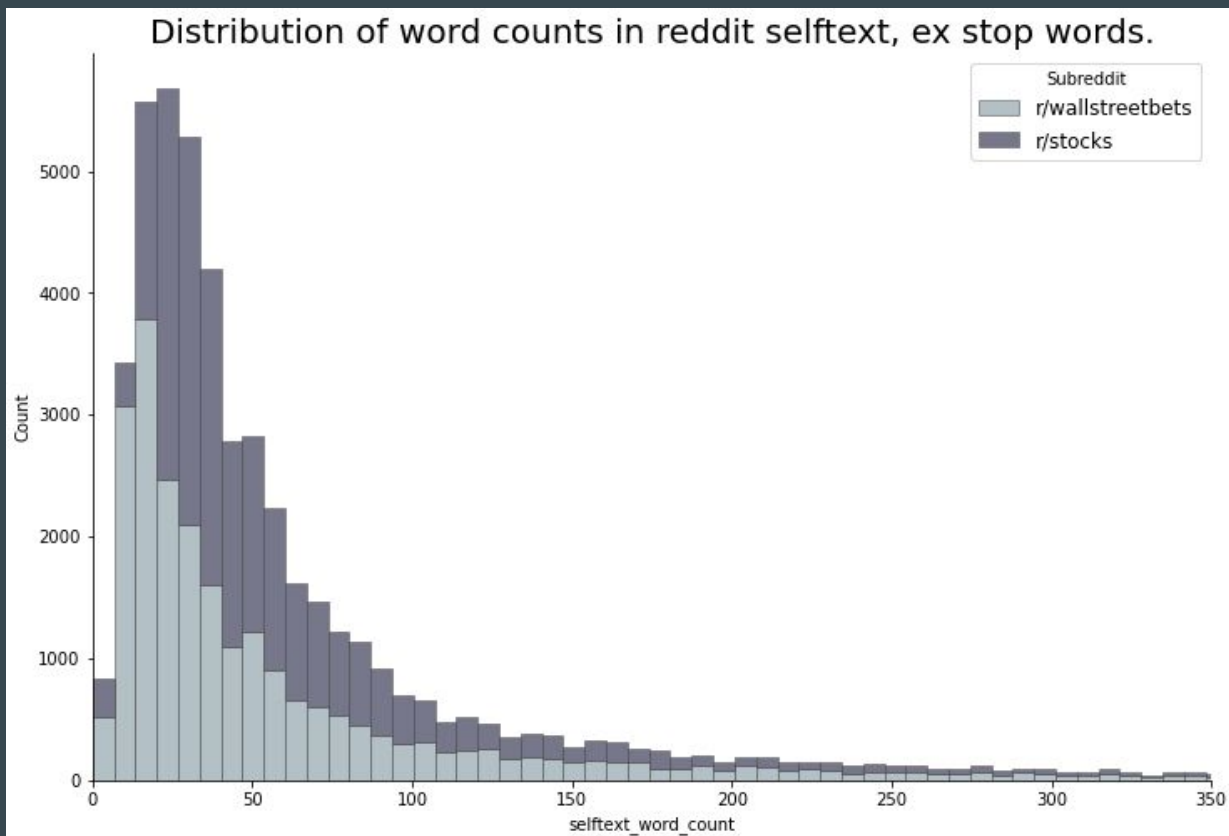
Basics:

25,000 rows of data were collected from each subreddit, r/WallStreetBets and r/stocks.

Both subreddits have a similar discussion topics, IE the stock market.

Through the magic of programming, we were able to to collect a robust starter data set that was cleaned and normalized as the corpus was being assembled.

# Detecting Fringe Advice: Initial review of corpus



It makes sense that WSB does not have the same quantities of words in their posts.

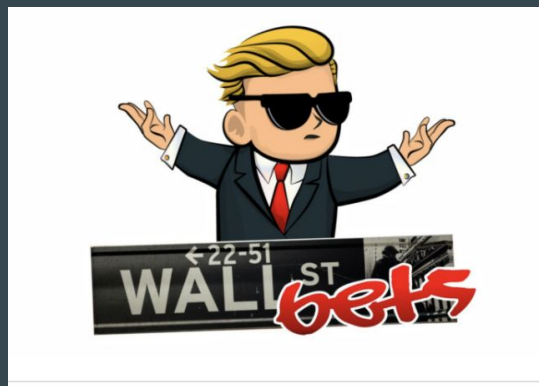
Unexpected gap!

# Detecting Fringe Advice: STONKS

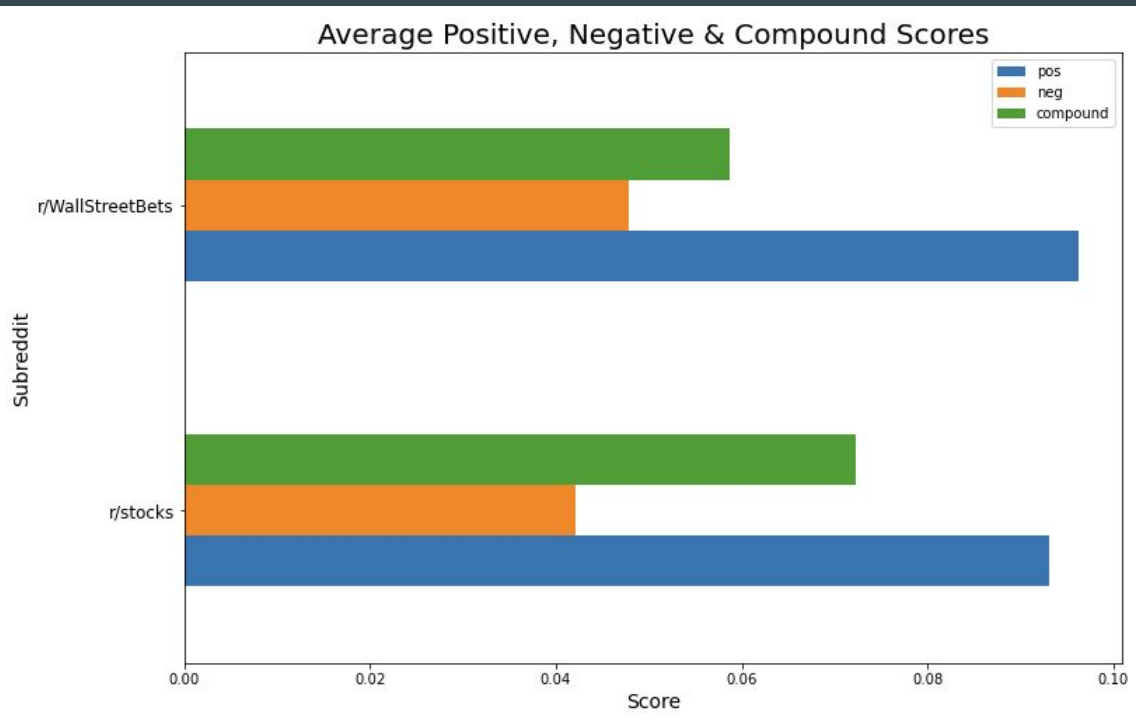


A very strong indicator of posts belonging to WSB is the use of memes.

Famously or infamously users of WSB make use of graphic meme's and emojis to express ideas about investing. Some are more palatable than others.



# Detecting Fringe Advice: What about the words?

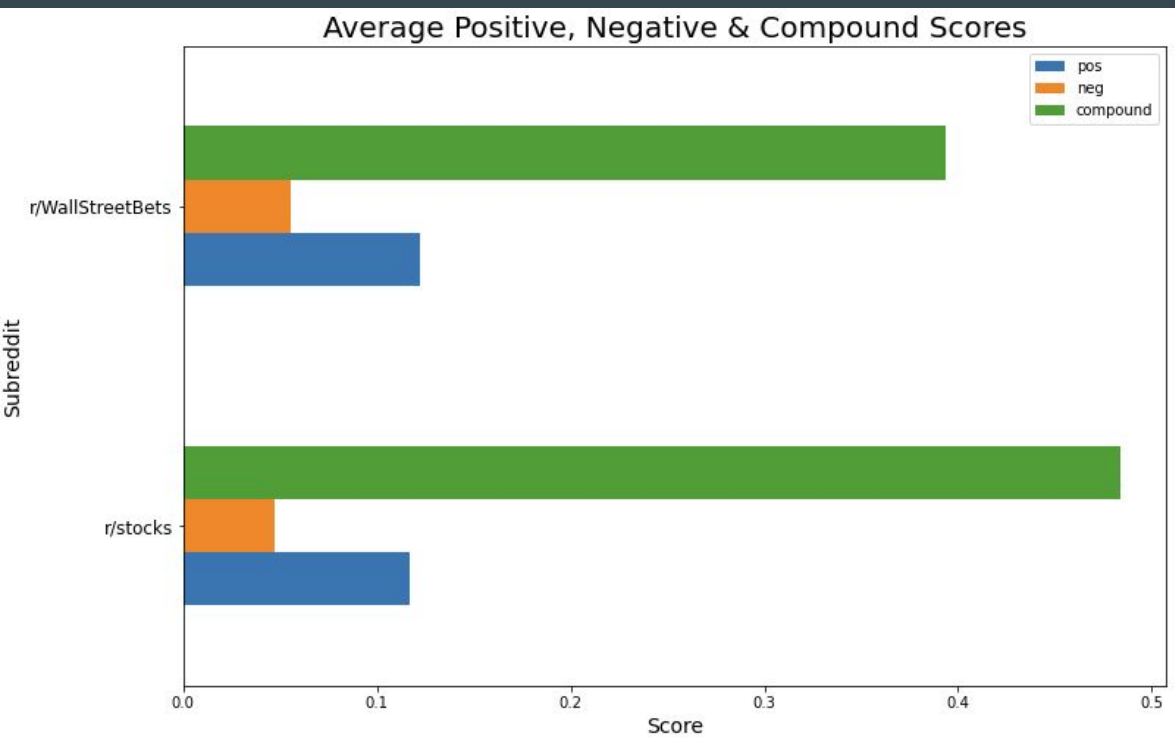


Corpus word count in titles:  
256,627

The chart at left is showing  
VADER polarity over the  
‘Title’ column of our corpus.



# Detecting Fringe Advice: VADER polarity

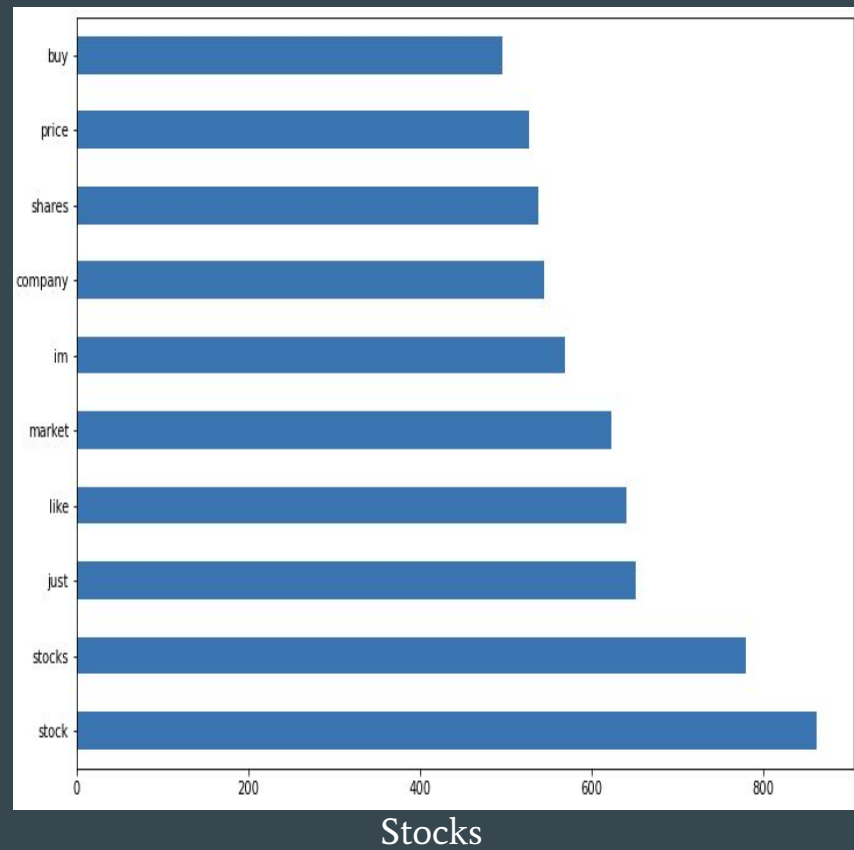
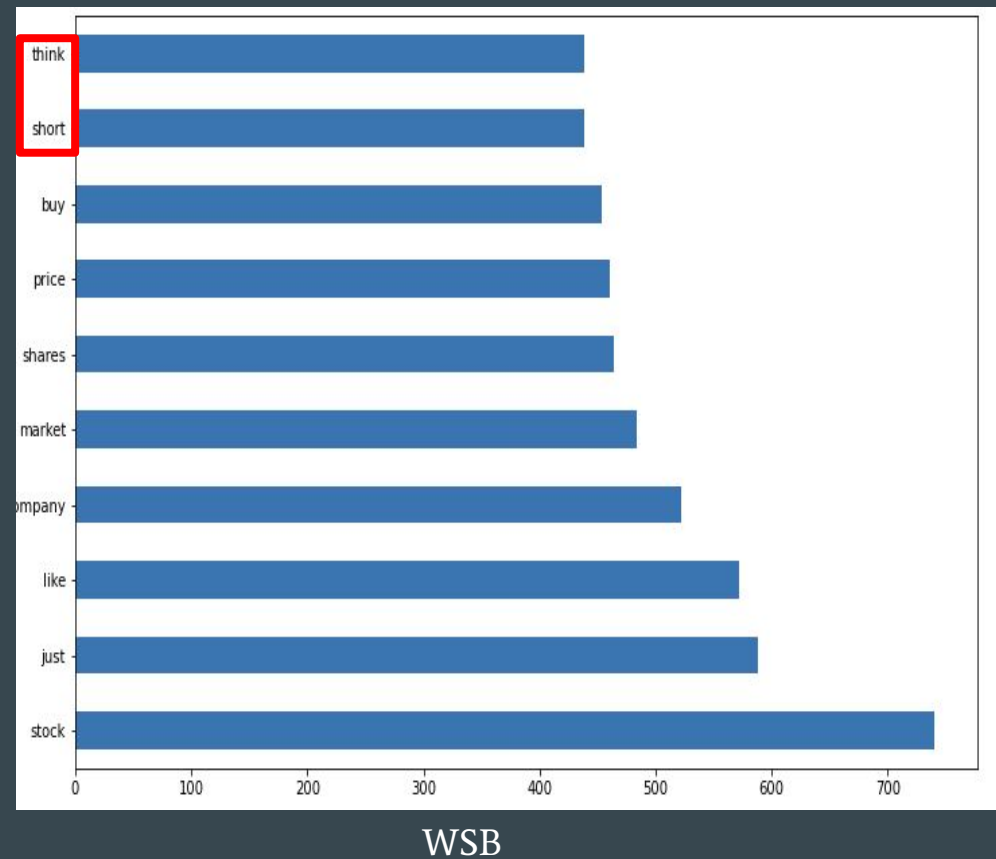


Polarity of the Selftext column shows a nice gap of nearly 10 basis points.

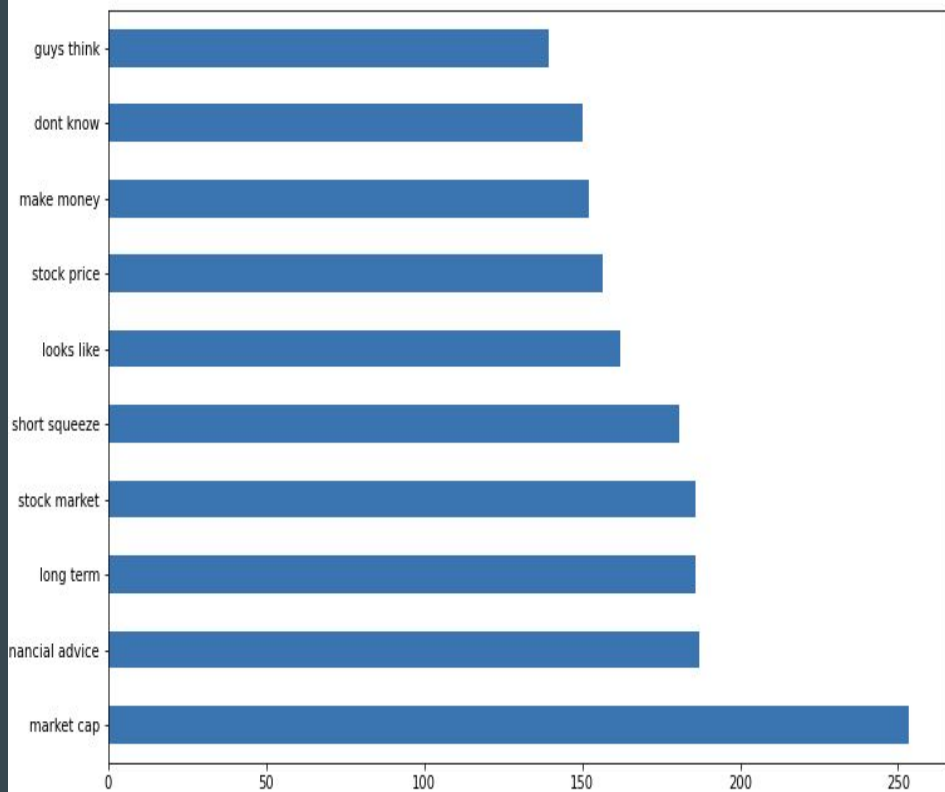
Total words in Self text:

4,714,304

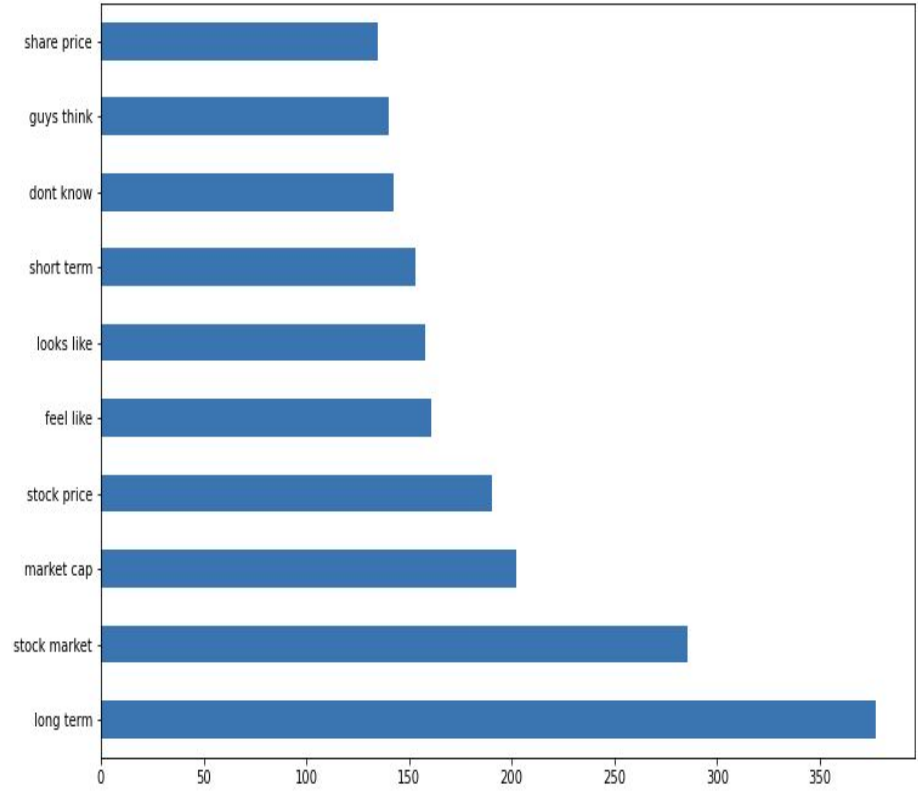
# Detecting Fringe Advice: Unigrams across selftext



# Detecting Fringe Advice: Bi-grams across selftext

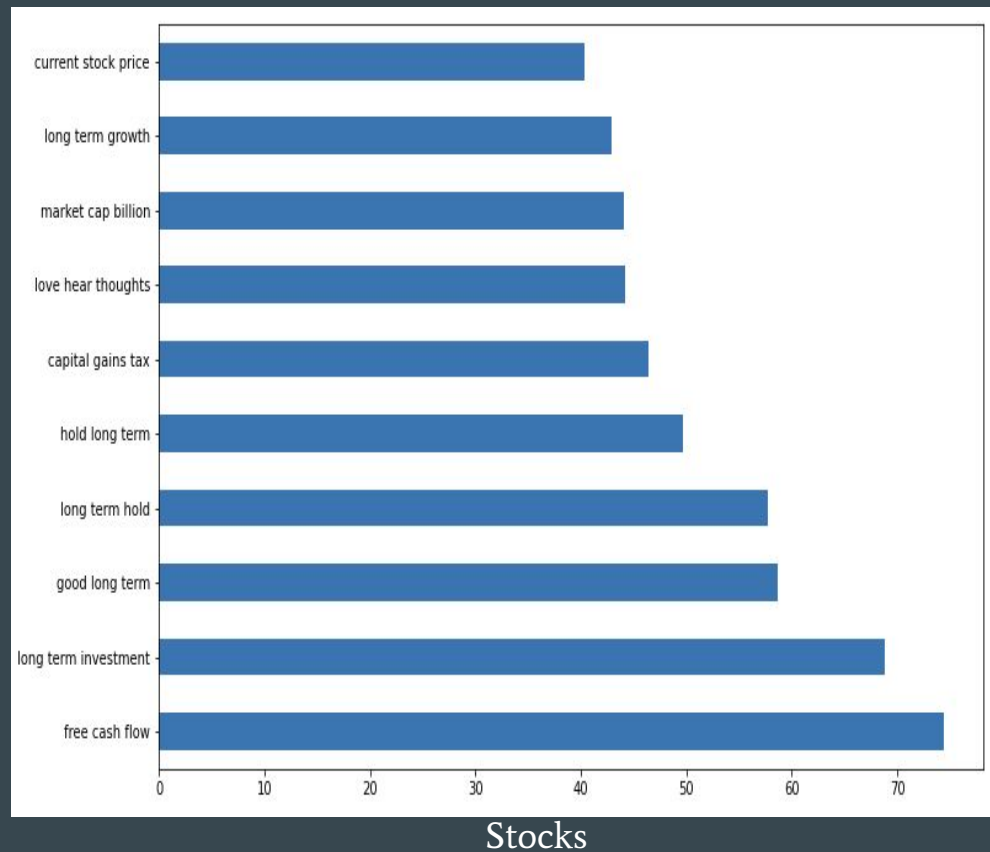
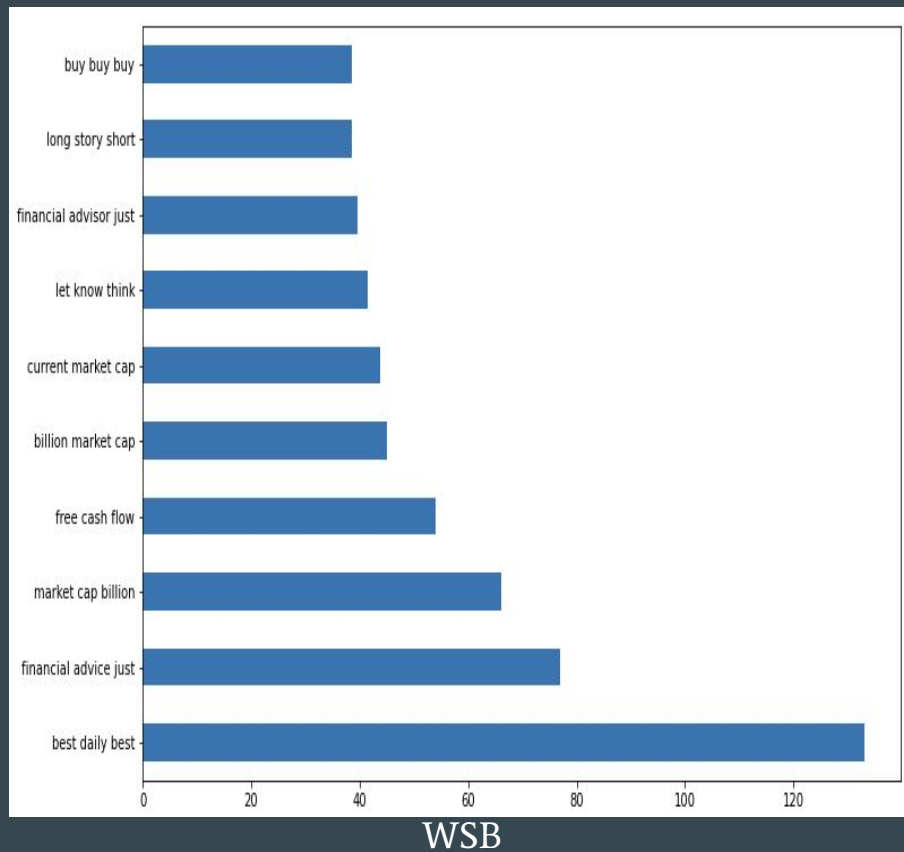


WSB

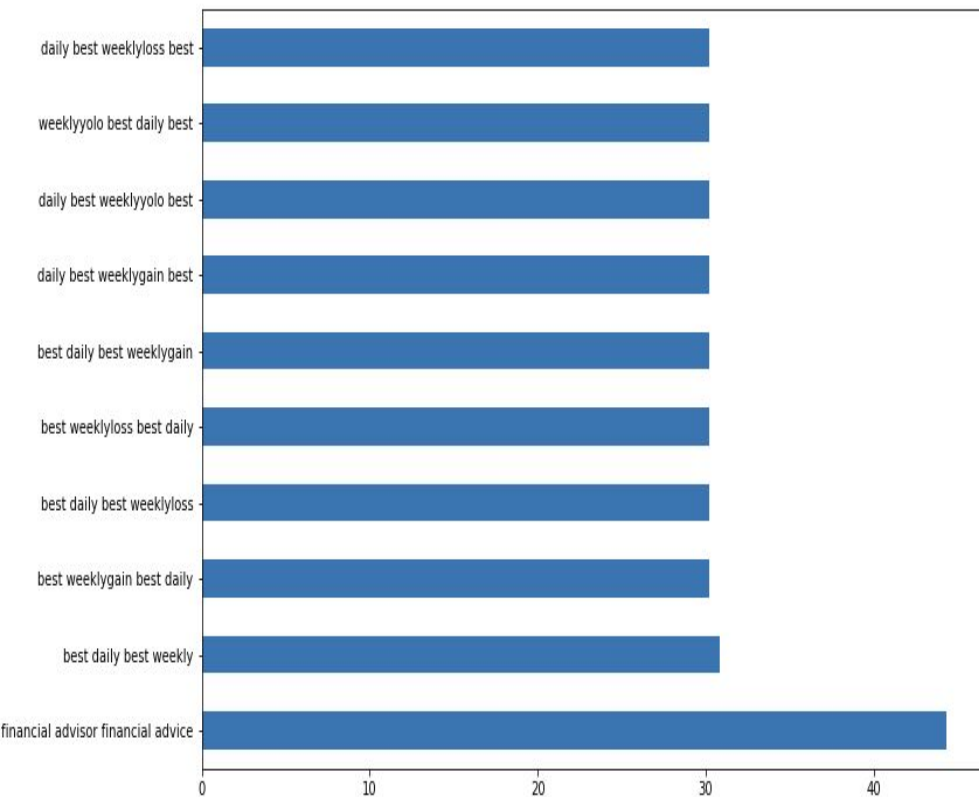


Stocks

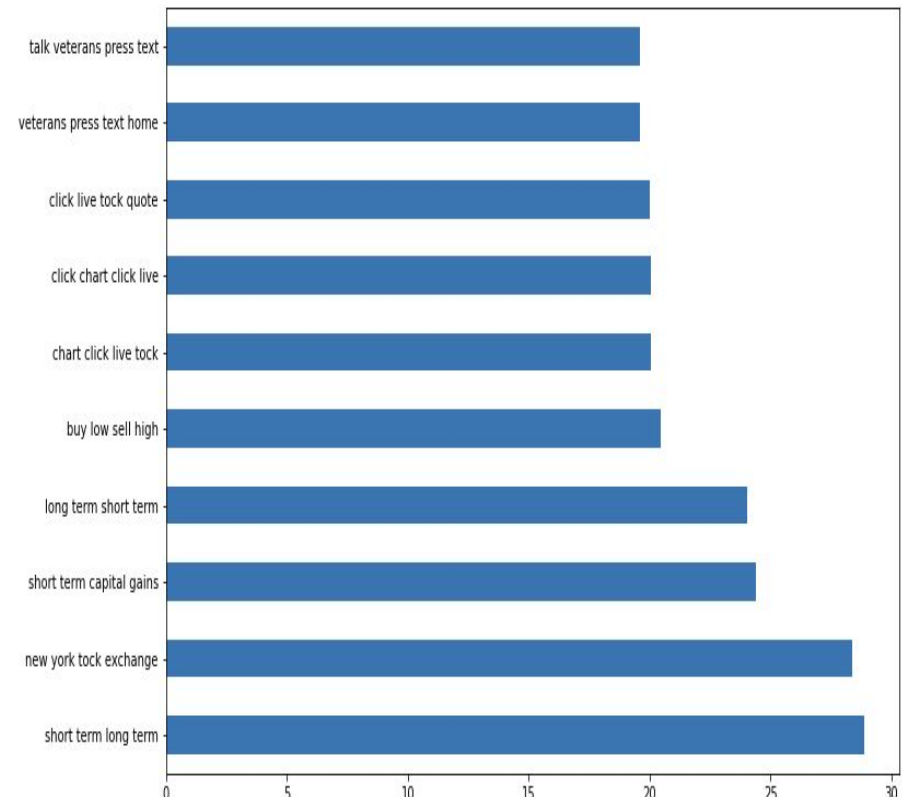
# Detecting Fringe Advice: Tri-grams across selftext



# Detecting Fringe Advice: Quadra-grams across selftext



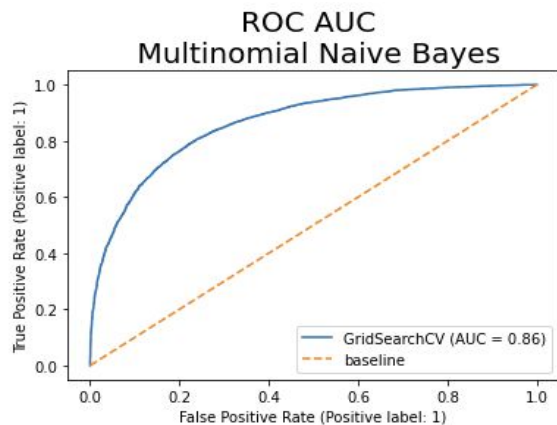
WSB



Stocks

# Detecting Fringe Advice: MNB Best Model

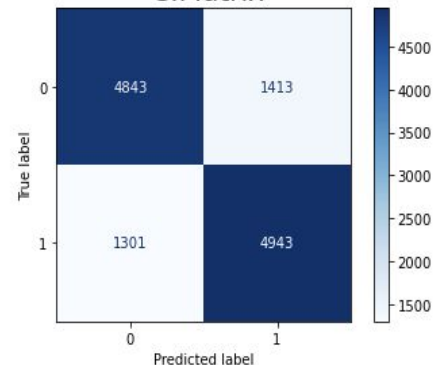
Metric	Null Model	Multi.Naive Bayes (MNB)	Random Forest Classifier (RFC)	$\Delta$ RFC - MNB	Extra Trees Classifier (ETC)	$\Delta$ ETC-mnb
Accuracy	0.50	Training: 0.808 Testing: 0.783	Training: 0.997 Testing: 0.792	Training: 0.189 Testing: 0.009	Training: 0.997 Testing: 0.799	Training: 0.189 Testing: 0.016
Type I error	---	1,413	1,925	492	2,321	908
Type II error	---	1,301	1,175	-120	847	-454
Sensitivity	---	0.792	0.811	0.019	0.864	0.072
Precision	---	0.778	0.727	0.051	0.699	-0.079
F1	---	0.785	0.766	-0.019	0.773	-0.012
ROC AUC	---	0.865	0.84	-0.025	0.848	0.017



Recommendation:  
Advisors can use this tool to better detect if their clients are getting outside fringe advice.

Investors can use this to determine if signals are legitimate WSB.

Multinomial Naïve Bayes Classifier Model  
C.Matrix



# Detecting Fringe Advice: MNB Best Model



Thanks!