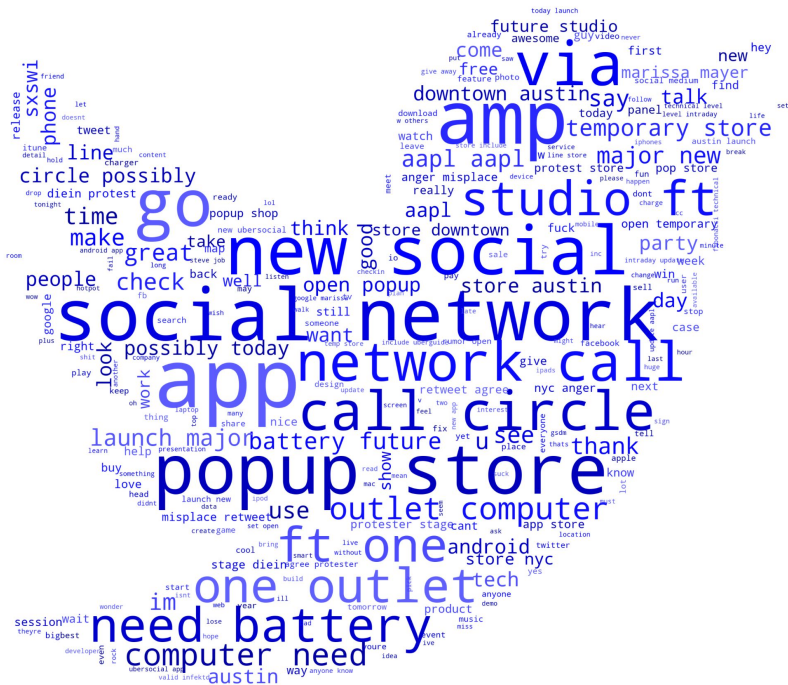


Preventing “Panic Selling”

Natural Language Processing Model for Twitter Reviews

By Andrew Levinton



Business Problem

- Analyze tweets from twitter to gain insight of sentiment.
- Determine which features of tweets best show to predict if tweets are positive, negative, or neutral.
- Optimize tracking positive and negative sentiment for companies.
- Minimize negative sentiment for companies to prevent decline in stock market value.

The Data

Two datasets from the website data.world's crowdfunder:

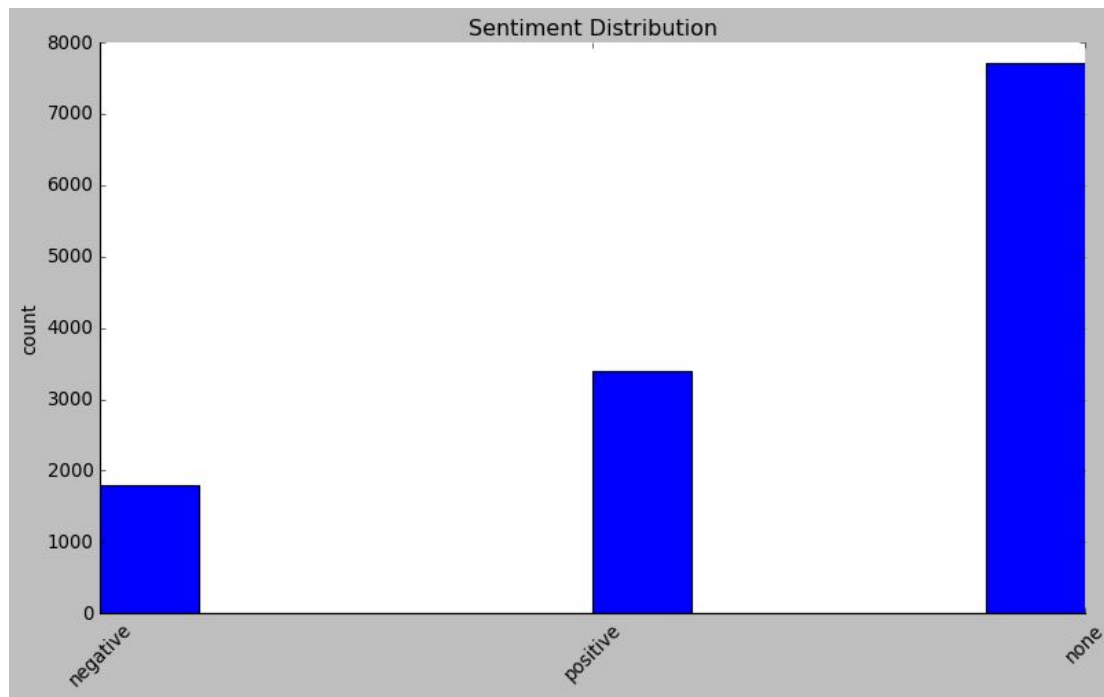
- Brands and Product Emotions Judge Emotion About Brands and Products
- Apple Twitter Sentiment
- 12,896 tweets

Class Imbalance

Neutral - 7706

Positive - 3401

Negative - 1789



Data Preprocessing

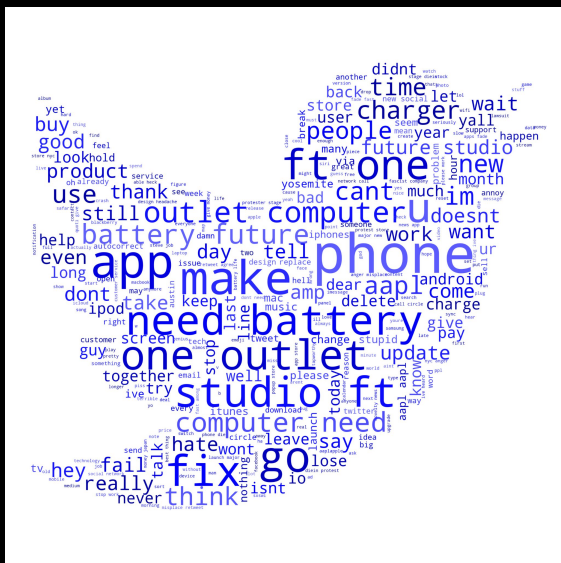
Text Before Cleaning:

"RT @LaurieShook: I'm looking forward to the #SMCDallas pre #SXSW party Wed., and hoping I'll win an #iPad resulting from my shameless promotion: #ChevySMC"

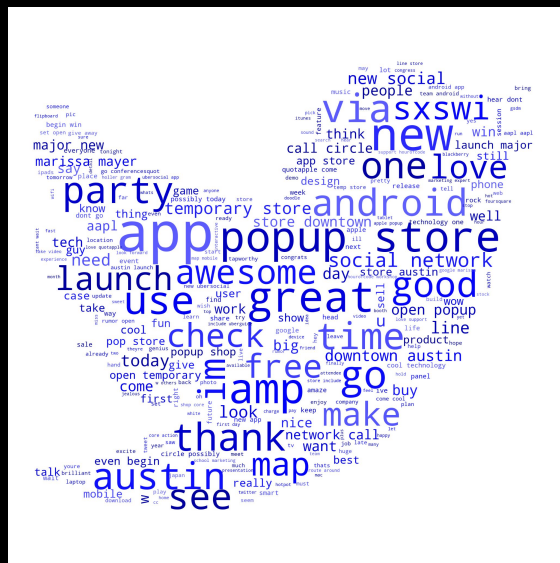
Text After Cleaning:

"im look forward smcdallas pre party wed hop ill win result shameless promotion chevysmc"

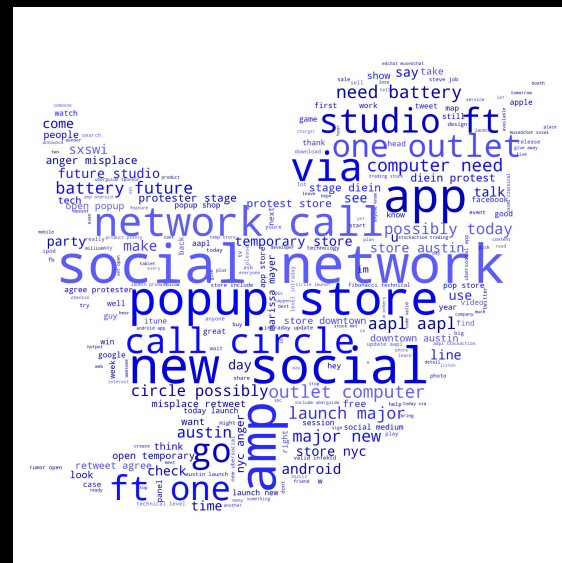
Negative



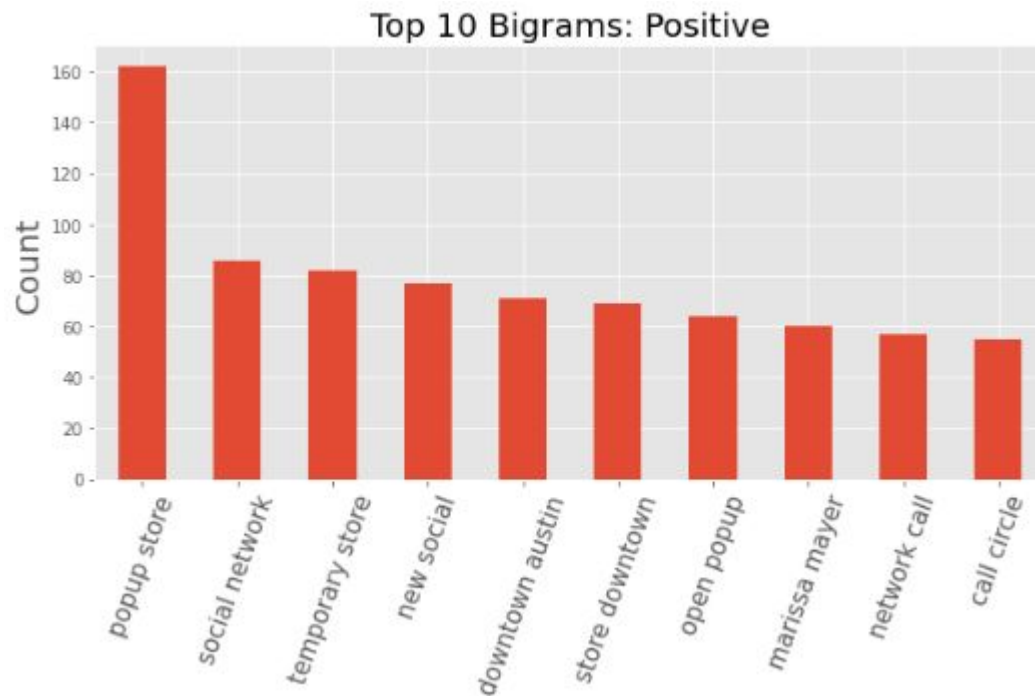
Positive



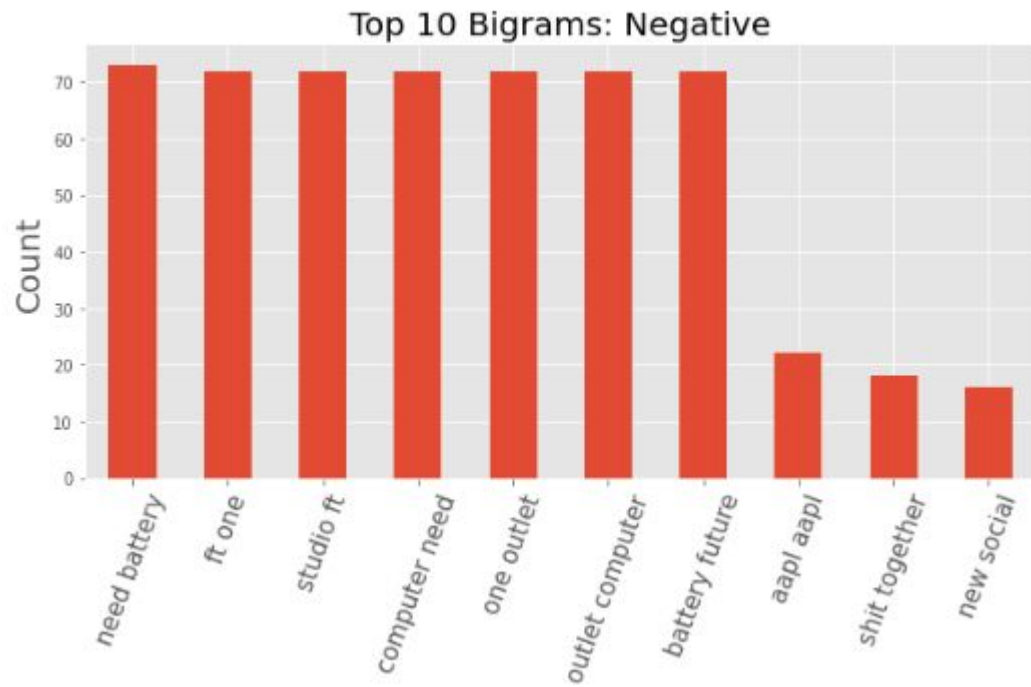
Neutral



Findings



Findings



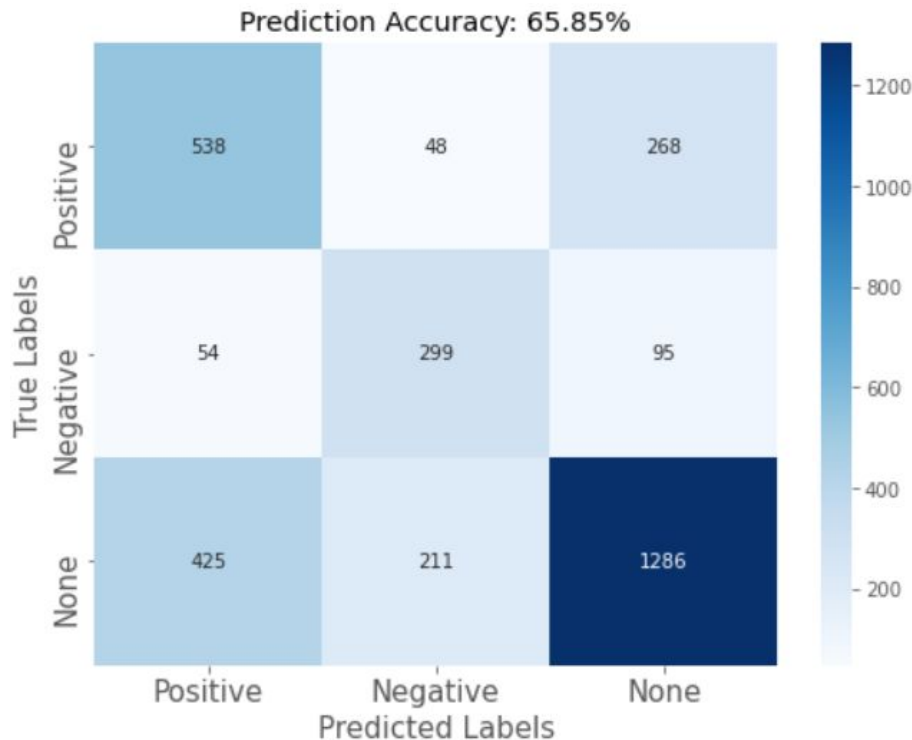
Modeling Process



Model Performance

The model correctly identified:

- 63% of the actual **positive** instances
- 67% of the actual **negative** instances
- 67% of the actual **neutral** instances



Recommendations

- Maintain innovation!
- Add in more popup stores
- Quickly address potential battery issues
- Manage public relations(store protest/anger)
- Improve customer service

Future Work

- Increase the data sample and find one that is more balanced
- Look at tweets by product



Thank you!

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