Identifying disgruntled tweets

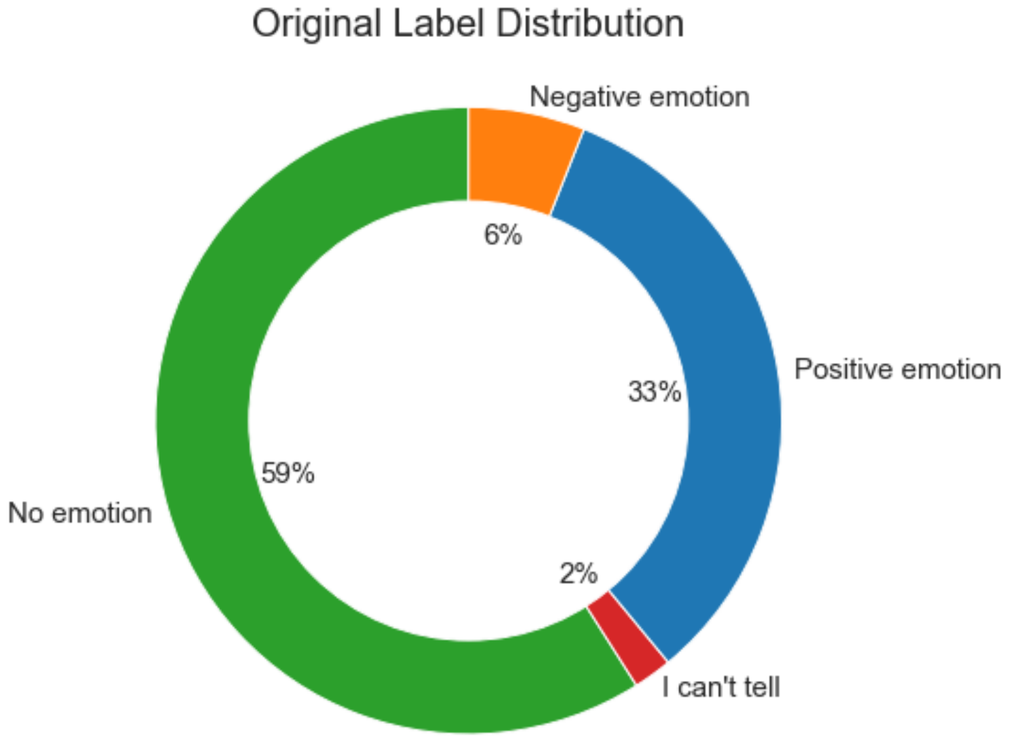
And how to increase Android's market share

Business Problem

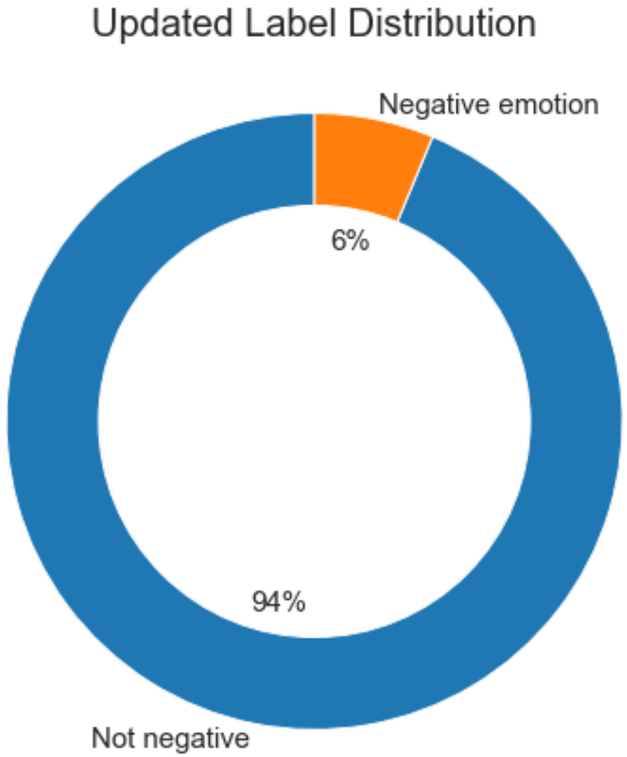
- Google wants to increase Android's share of the U.S. smart phone market
- Google is analyzing social media posts to find negative comments about mobile devices
- Analysts spend too much time reading through tweets that are positive or neutral
- Need a model to identify angry tweets that allows analysts to work at least twice as fast
- Need to retain as many angry / griping / complaining tweets as possible

Data

- Over 9,000 tweets about mobile devices and apps from 2011
- Each tweet has been rated as positive, negative or neutral



- Negative-sentiment tweets are only 6% of all tweets
- For this project, tweets are classified as negative-sentiment or not negative



Natural Language Processing Model

- Count vectorizer
- 2-, and 3-word blocks
- Max 1,500 words/blocks
- Excluded words list - 3 words only!
  - 'sxsw', 'mention', 'rt'

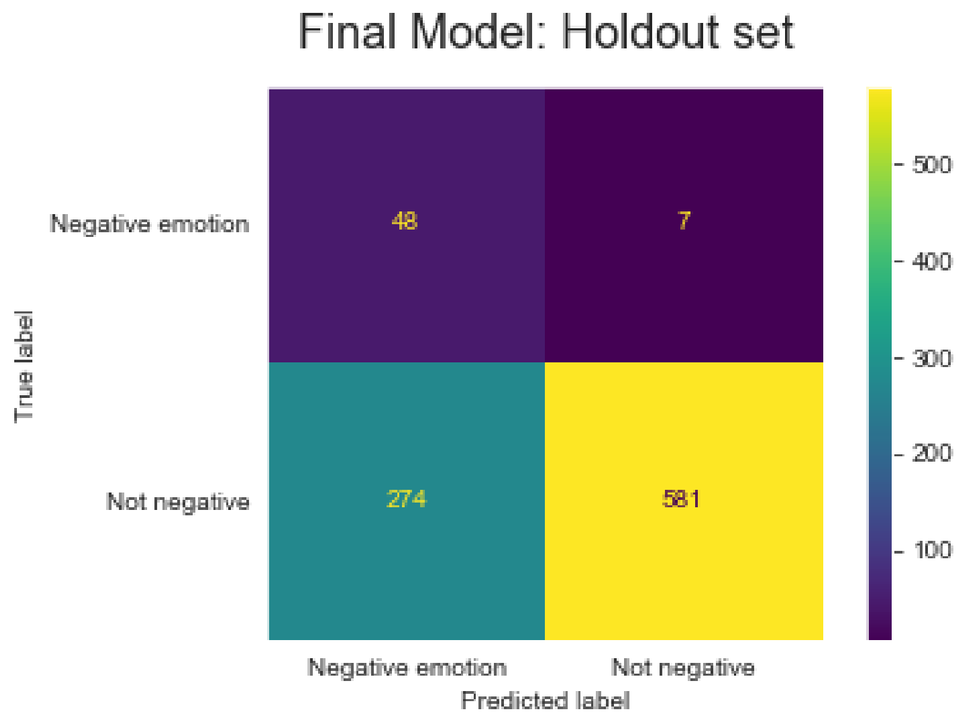
- Complement Naive Bayes model
- Suited to imbalanced data sets

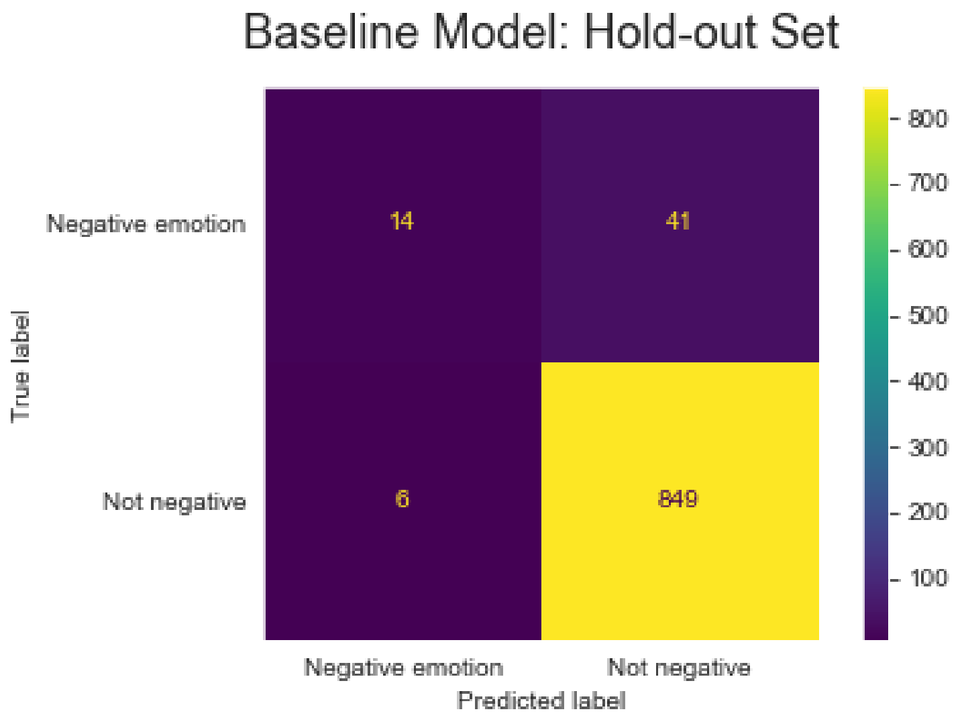
Results

Analysts can work over twice as fast, while sacrificing only 23% of the valuable information in griping tweets

Precision: 0.14 14% of tweets returned by the final model were complaining

Recall: 0.77 77% of complaining tweets were identified by the final model





Conclusions and Future Work

Model effectively reduces the amount of time analysts spend reading social media posts

Google can mine valuable information from the posts returned, and improve Android devices

“ ?! ”

Future Natural Language Processing Tools to test:

- Pre-trained word vectorizer
- Decision-tree based model
- Neural net

Thank you!

Questions?
Comments?

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