Classifying Sentiment of Tweets at SXSW Austin

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Introduction

Our Task:

Classify tweets by user sentiment, based upon the content of the tweet.

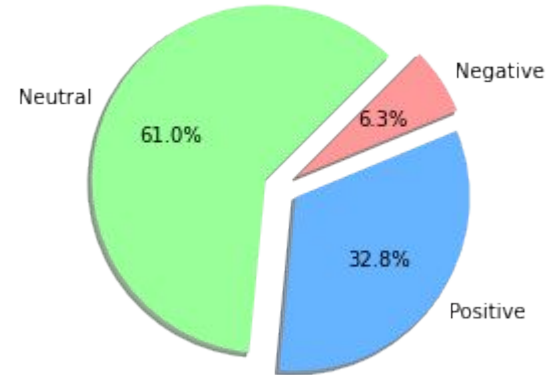Convey insights into the dataset through visualizations

Data

We have 9093 tweets.

5802 of these tweets have no product in mention.

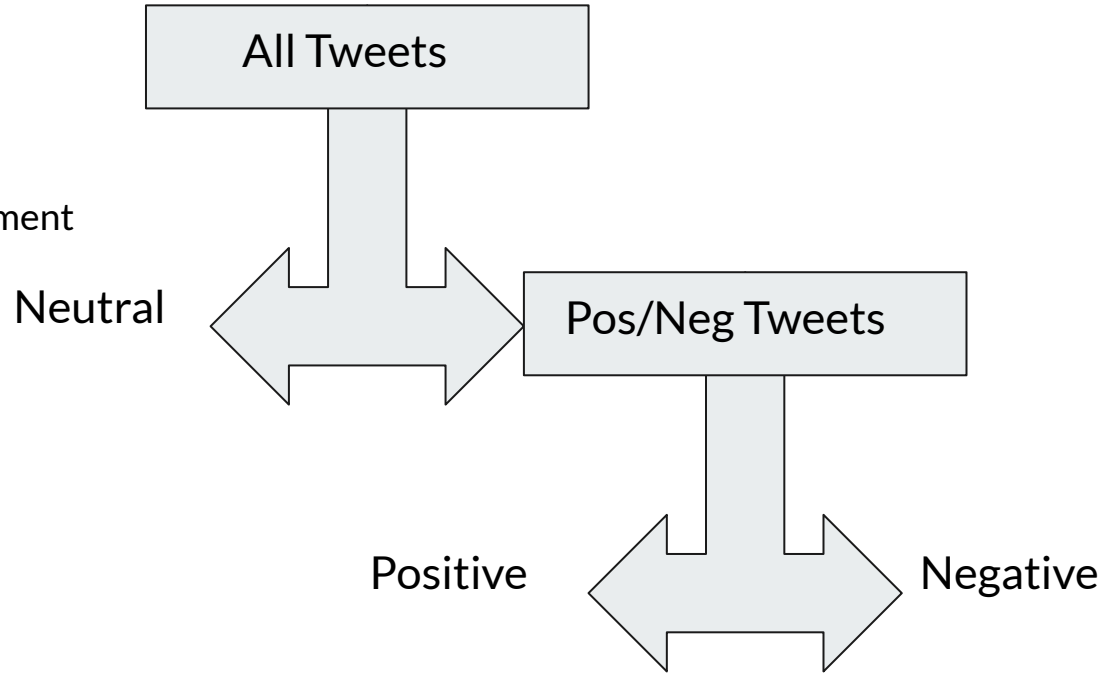5545 are neutral. 2978 are positive. 570 are negative

Tweet Class Breakdown

Neutral 61.0%

Negative 6.3%

Positive 32.8%

Most used Words - Apple

Most Used Words - Google

Positive V Negative Words

Positive →

Negative ←

Modelling Flow

Phase 1: Classifying on Existence of Sentiment

Phase 2: Classifying on Negative V Positive Sentiment

All Tweets

Neutral
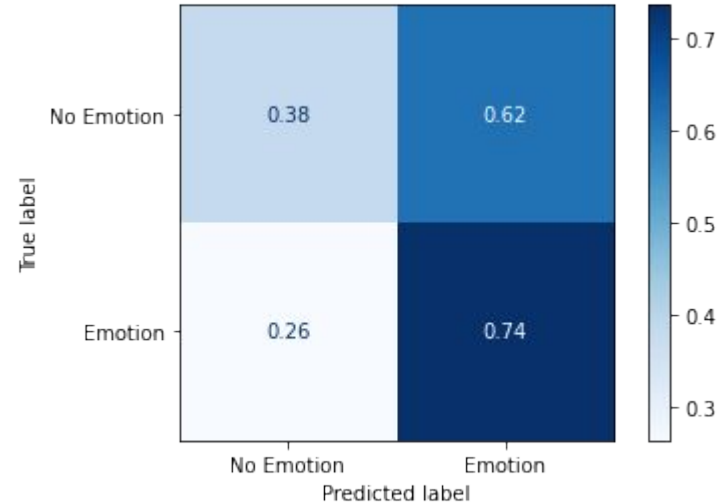
Pos/Neg Tweets

Positive

Negative

Modelling - Phase 1

Gaussian Naive Bayes

Recall: 89 %

F1 : 65%

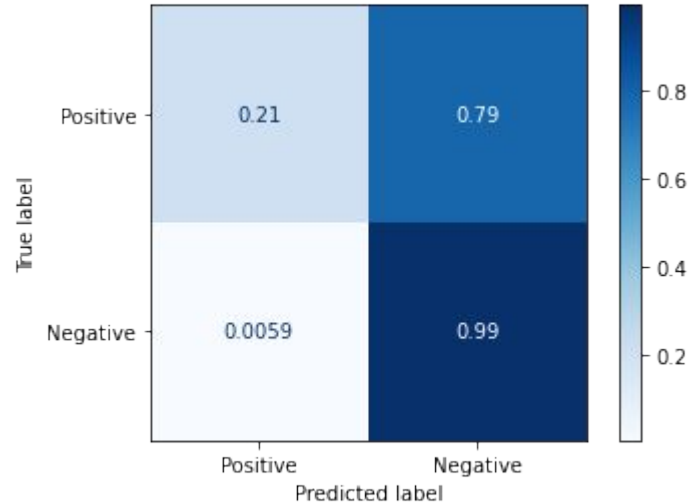Struggles with tweets that contain no sentiment, but excels with sentimental tweets.

Modelling - Phase 2

Random Forest Classifier

Accuracy: 87%

F1 : 84%

This model performs well, especially with negative tweets.

Conclusions

Our models perform best when classifying tweets with negative sentiment, which are arguably the most important tweets to classify correctly.

Separating our classification into two models allowed us to both simplify our workflow, as well as address class imbalance.

Recommendations

I. Apple had a larger portion of negative reviews than Google, at 23% compared to Google's 14%, we recommend that Apple investigate these tweets and attempt to gain more information on where this negativity comes from.

II. Google should strive to have a greater share of tweets altogether. Apple was referenced twice as much during SXSW, so a greater marketing strategy may help in closing this gap.

III. Being able to compare national tweet sentiment versus SXSW tweets sentiment would give us a baseline to compare to, and allow us to gain comparative information.

Next Steps

Our dataset had some limitations that could be improved upon

    Data was collected from a very small sample space

    Data was heavily imbalanced, and not fully labelled.

Also, we could have analyzed our tweets to construct a list of most common phrases, much like we did with most common words. This would give better context to what twitter users average sentiments are.

Thank you!

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