Classifying Android & Iphone Reddit Posts

Problem

Android Inc

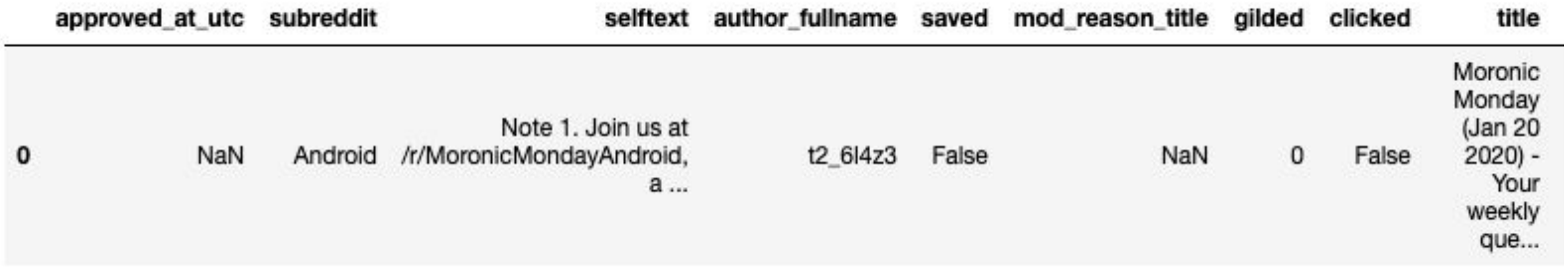
We are looking at how to better design and develop android phones. There are many variants of Android and we want to look at reddit forums to see what users prefer in a mobile phone. At the same time, Android has a close competitor, Iphone.

We would also want to look at their users comments on Iphone as well. However as there are still differences in the phones' users and usage, we would want to classify the two types of reddit posts to enhance our research.

Reddit Posts

786	715
https://www.reddit.com/r/Android	https://www.reddit.com/r/Iphone/new

Data Analysis & Cleaning



	approved_at_utc	subreddit	selftext	author_fullname	saved	mod_reason_title	gilded	clicked	title
0	NaN	Android	Note 1. Join us at /r/MoronicMondayAndroid, a ...	t2_6l4z3	False	NaN	0	False	Moronic Monday (Jan 20 2020) - Your weekly que...

Remove columns all columns except these 3.

Selftext	Title	Subreddit
I like Android!	Android or Iphone	Android

Data Analysis & Cleaning

Selftext	Title	Subreddit
I like Android!	Android or Iphone	Android

- **Subreddit** will be our target as it indicates the post category.
- Combine Android and Iphone dataframes.
- Null values of are filled with blank.
- Concat selftext and title into one column **content**.
- **Subreddit** is map to 1 and 0.

content	Subreddit
I like Android! Android or Iphone	1
Iphone is great! Use Iphone	0

Data Analysis & Cleaning

Content column is cleaned:

- Removing all text characters and space.
- Removing stop words. (Words that will confuse our model)
- Lemmatizing (Combine words to their root word)

Comparing 2 Classification Models

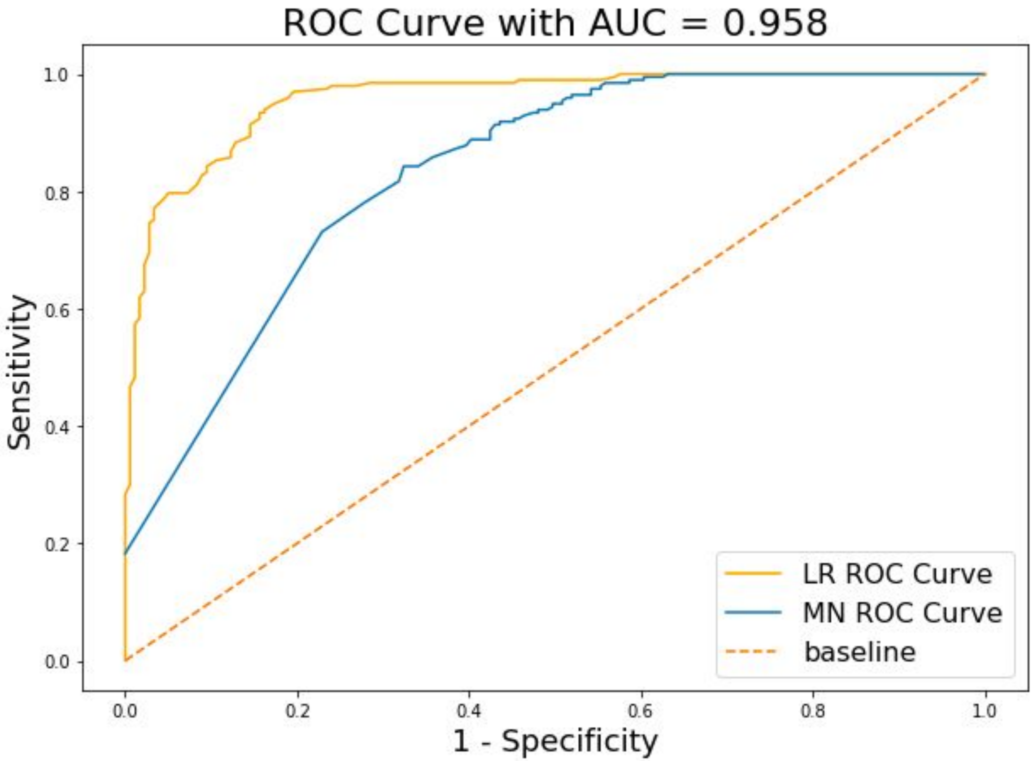
Logistic Regression

	Pred Iphone	Pred Android
Actual Iphone	*148*	*31*
Actual Android	*11*	*186*

Naive Bayes Multinomial

	Pred Iphone	Pred Android
Actual Iphone	*75*	*104*
Actual Android	*3*	*194*

Comparing 2 Classification Models



The more area under a curve means better better separated our distributions our model give.

When our ROC AUC is closer to 1, then our positive and negative populations are better separated which means the model is better.

From this graph, we can see that Logistic Regression gives a much better curve.

Conclusion

- From the model stats and ROC AUC curve, we can see that Logistic Regression is a better model for our use case. It gives high score for both True Positive and True Negative which is useful for our phone analysis.
- To improve our model, we can look into scrapping more posts for analysis or even look for forums under similar topics.
- To further build on this model, we can look at sentiment analysis on the 2 topics. We can also look at specific mobile phone features that has more positive sentiment.