



APPLE & GOOGLE PRODUCTS SENTIMENT ANALYSIS

phase_4

Business Overview

Apple is performing well with strong statistics, including leading in smartphone market share and significant revenue growth. Influential tech reviewers like Marques Brownlee contribute to Apple's popularity. On the other hand, Google dominates the global search engine market with over 90% market share, and its various products have billions of users.

Due to the increasing volume of feedback on Twitter and the use of new slang, machine learning can help analyze tweet sentiment to monitor customer opinions and make necessary adjustments in policies or consider outsourcing analytics services.



Problem Statement

The expanding market presence of Apple and Google products has resulted in a significant surge in their user base within the industry. This expansion has, in turn, generated a substantial volume of feedback from customers expressing both satisfaction and dissatisfaction, with a notable portion of this feedback originating from Twitter. Consequently, addressing these customer concerns and proactively improving the overall perception of their respective brands has become a paramount priority for both Apple Inc. and Google.

Main Objective

To create a sentiment analysis model capable of evaluating the sentiment expressed in a tweet's content, initially as a binary classifier for positive and negative tweets, with the potential for expansion to a multiclass classifier by incorporating neutral tweets.





Specific Objectives

- 01 To develop a real-time monitoring system capable of retrieving and classifying live tweets related to Apple and Google products using the sentiment analysis model, ensuring scalability to handle high volumes of incoming tweets.
- 02 To conduct an in-depth analysis of the sentiment classification model's performance and fine-tune it for optimal accuracy and efficiency.
- 03 Identify which company has more negative sentiments and form recommendations
- 04 To explore the feasibility of integrating additional sources of customer feedback, such as customer reviews on e-commerce platforms, into the sentiment analysis system to provide a comprehensive view of customer sentiment beyond Twitter data.



Data Understanding



The data contains about 9090 tweet opinions from users of apple and google products



The data was sourced from data.world and was used to train LSTM, GRU & RNN models.

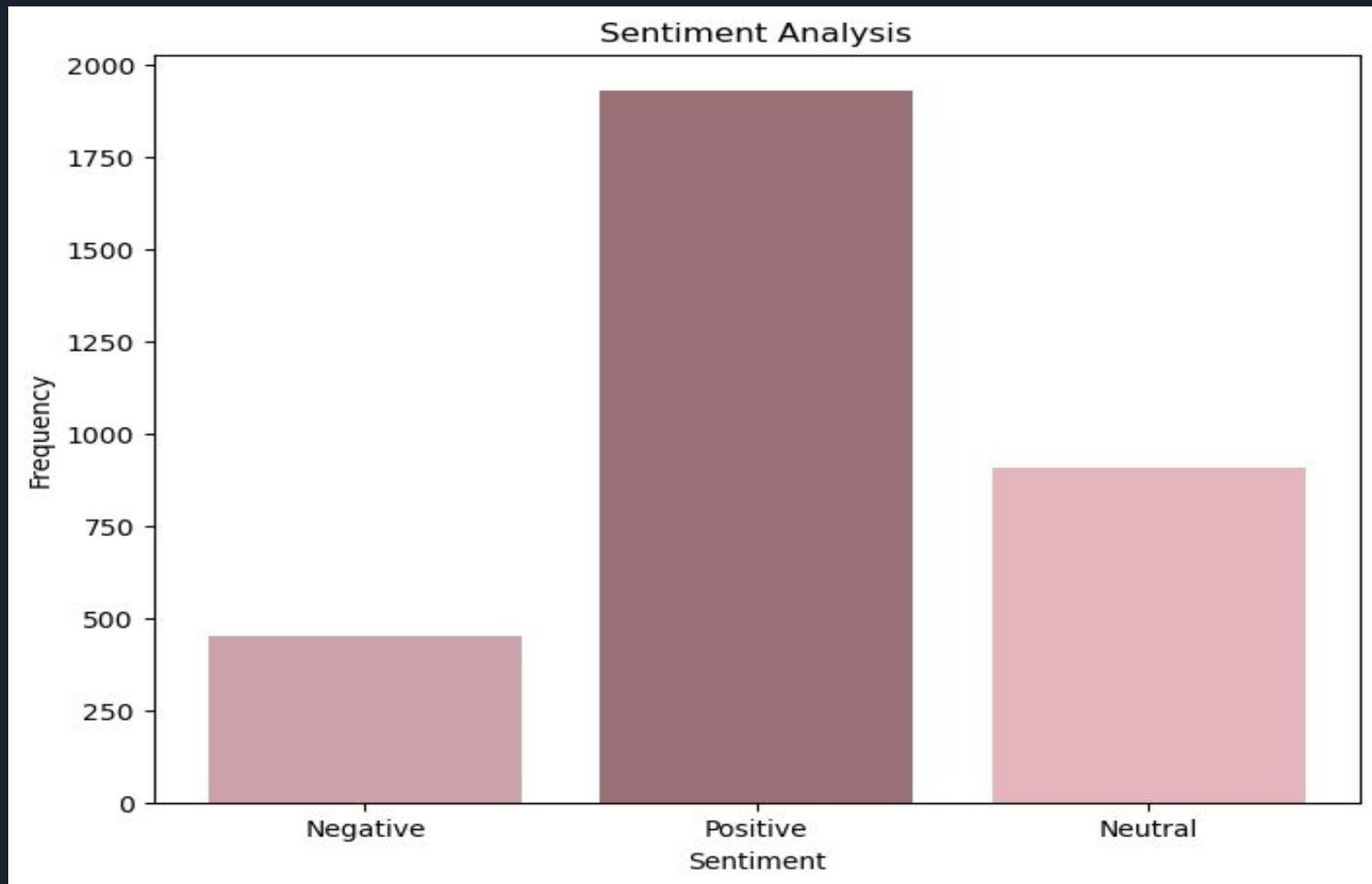


Performed a series of preprocessing steps to parse the dataset to obtain insights



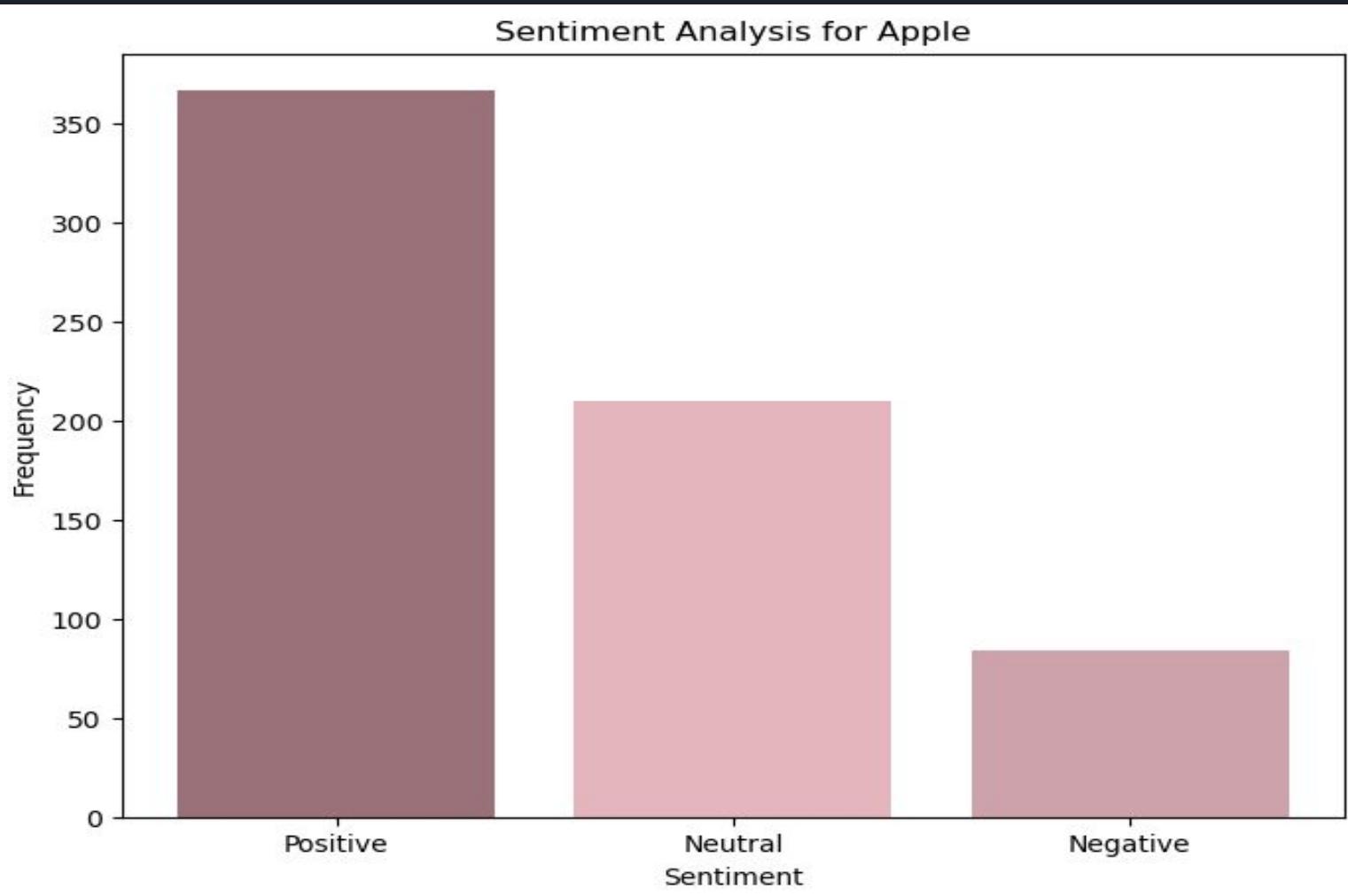


Sentiment analysis for apple and google products which indicate high number of positive sentiments.

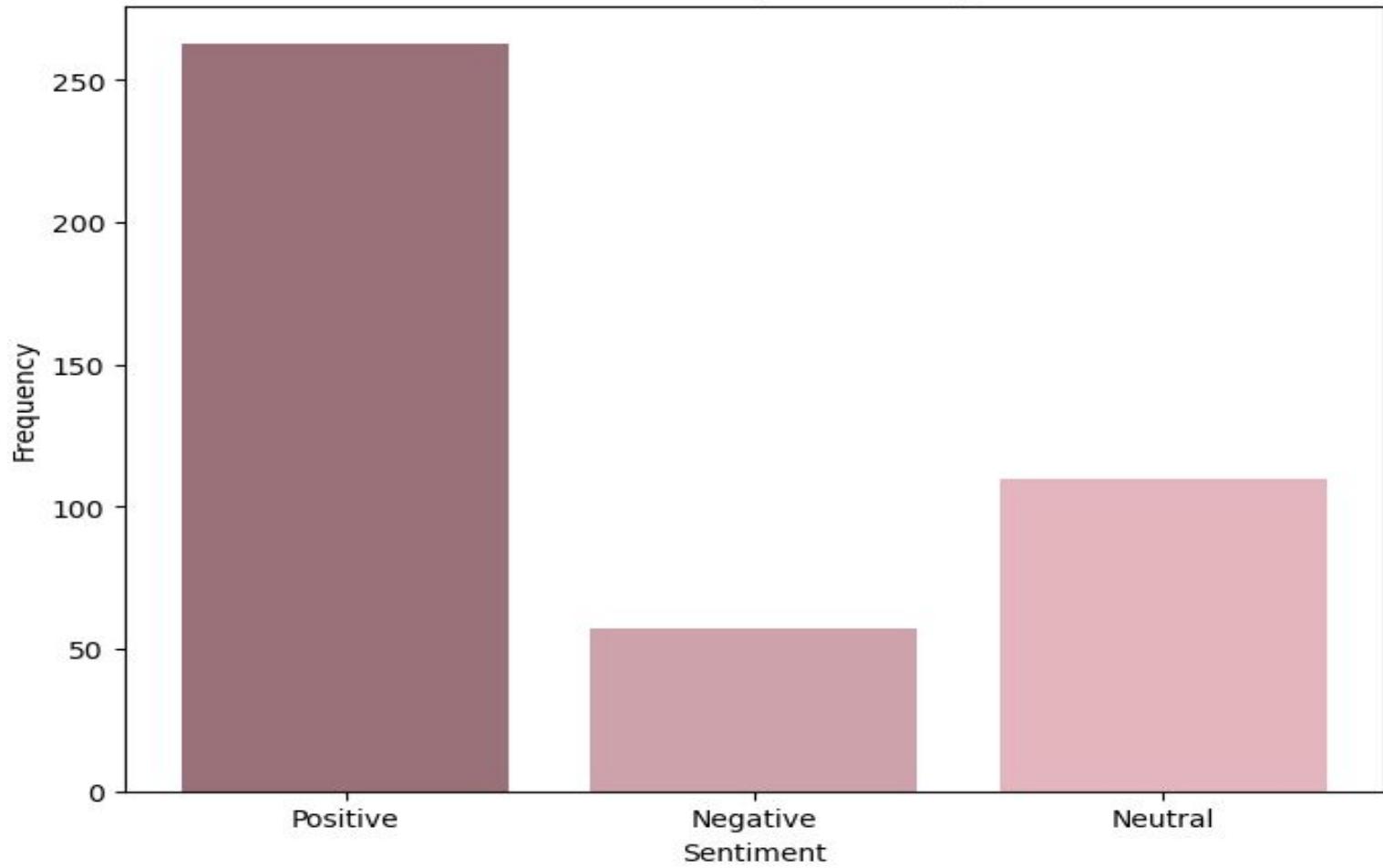


Sentiment Analysis for Apple

Sentiment analysis for apple products only which indicate high number of positive sentiments and also a higher negative sentiments than google products.



Sentiment Analysis for Google



Sentiment analysis for google products only which indicate high number of positive sentiments (not as high as apple) and also a low negative sentiments compared to google products.



Modelling

Tried two models
and settled on LSTM
model.

Evaluation

Evaluated the
performance of the
model and achieved
an accuracy score of
96%



Recommendations

- Proactive Engagement: apple products with a higher count of negative sentiments should pay attention to the feedback provided by customers.
- Personalized Marketing: Personalized marketing and offers could help increase positive reviews for google.
- Influencer Engagement: Identifying influential individuals or social media accounts that could amplify positive sentiments through collaborative promotional campaigns for both apple and google products



Conclusions

- Sentiments expressed by customers play a significant role in their decision to continue or discontinue their relationship with a product therefore negative sentiments should be addressed.
- The model has proven to have an accuracy of 96% in classifying whether a tweet is positive, negative or neutral and it can be used to continuously monitor the sentiments coming from the social media platforms.

Future steps: Integrate additional sources of customer feedback

- * While this objective is not explicitly addressed in my project, there's a possibility of extending the sentiment analysis system to include other sources of customer feedback, such as e-commerce reviews. This can be done as part of future work or enhancements to the project.
- * There is an emphasis on real-time monitoring and scalability sets the stage for incorporating additional data sources seamlessly in the industry.

Thank you!

