KET NLP ANALYSIS FOR APPLE

MAY 10 2024

OUR TEAM

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CONTENT

EXECUTIVE SUMMARY

Project Overview

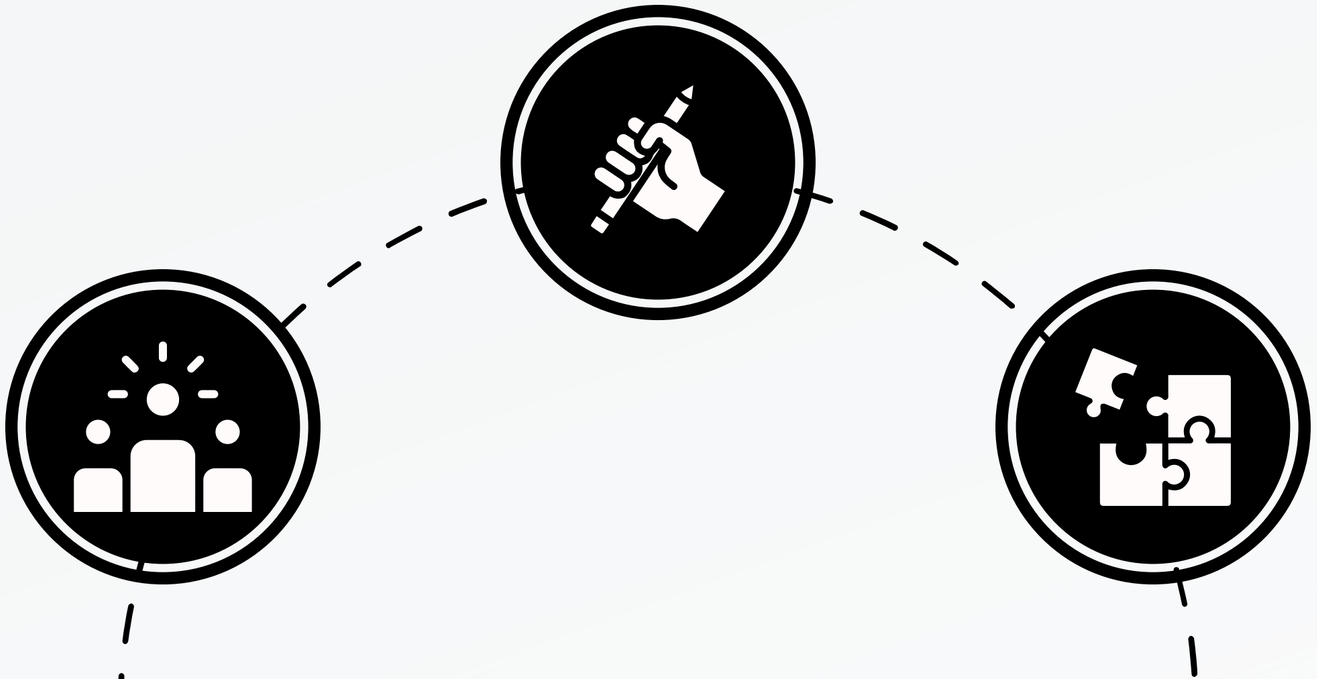
KET team analyzes negative sentiment tweets

Project Objective

Inform Apple's strategies for product development and customer engagement

Bottom Line

Model successfully captures 87% of the data



WHY DOES IT MATTER?

Reality

Neglect existing customers

=

Lose BILLIONS of dollars per year!

(https://www.businessnewsdaily.com/5833-how-to-keep-customers.html)

Prioritize customer sentiment

=

Safeguard revenue + long term success

Mission

THE DATA

Source:

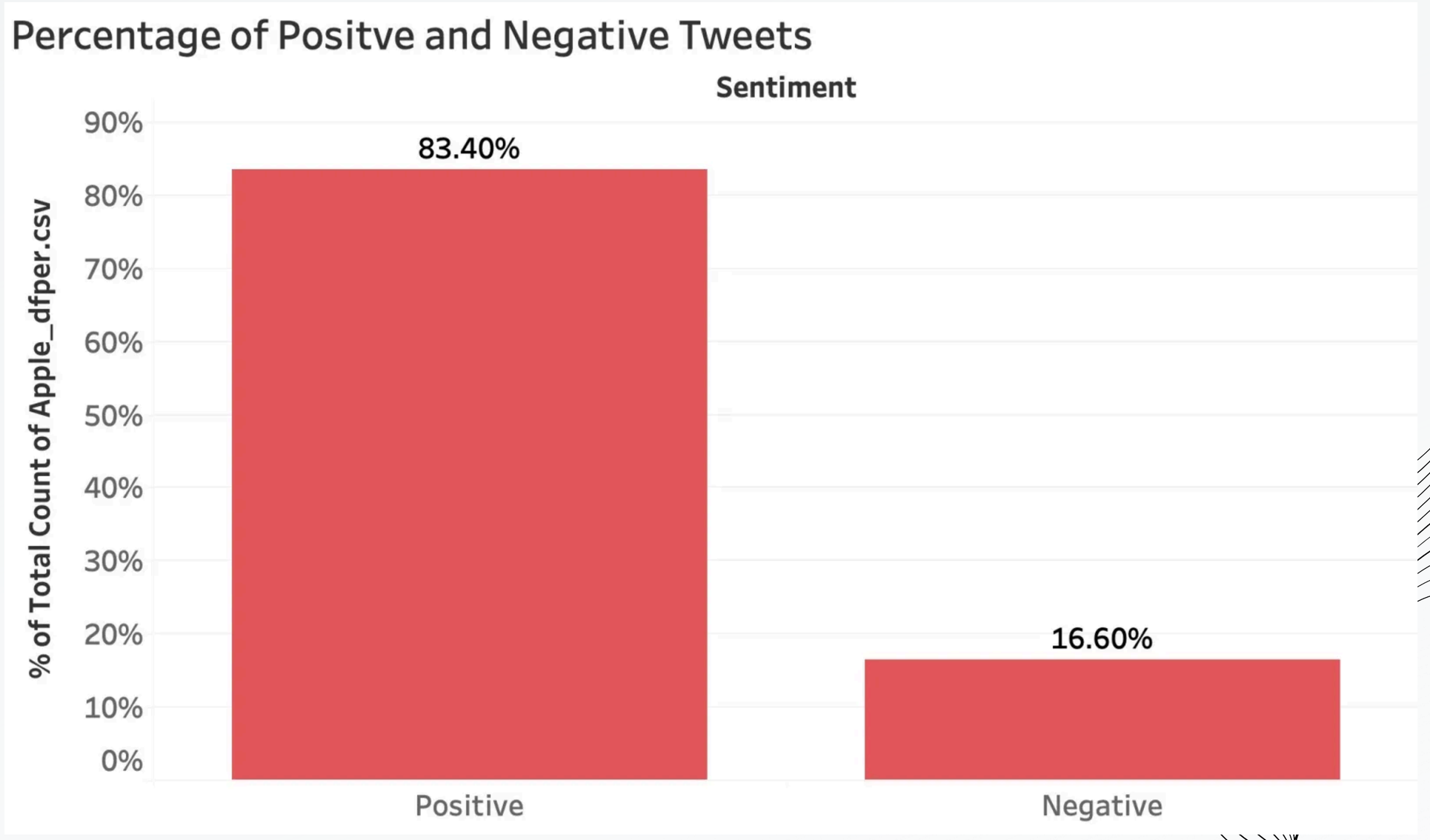
- CrowdFlower Twitter sentiment from the 2013 SXSW Conference
- Human raters rated the sentiment as positive, negative, or neither.

Limitations:

- Biases due to Twitter's user demographics
- Human error in accurate rating
- Class imbalance (positive/negative)

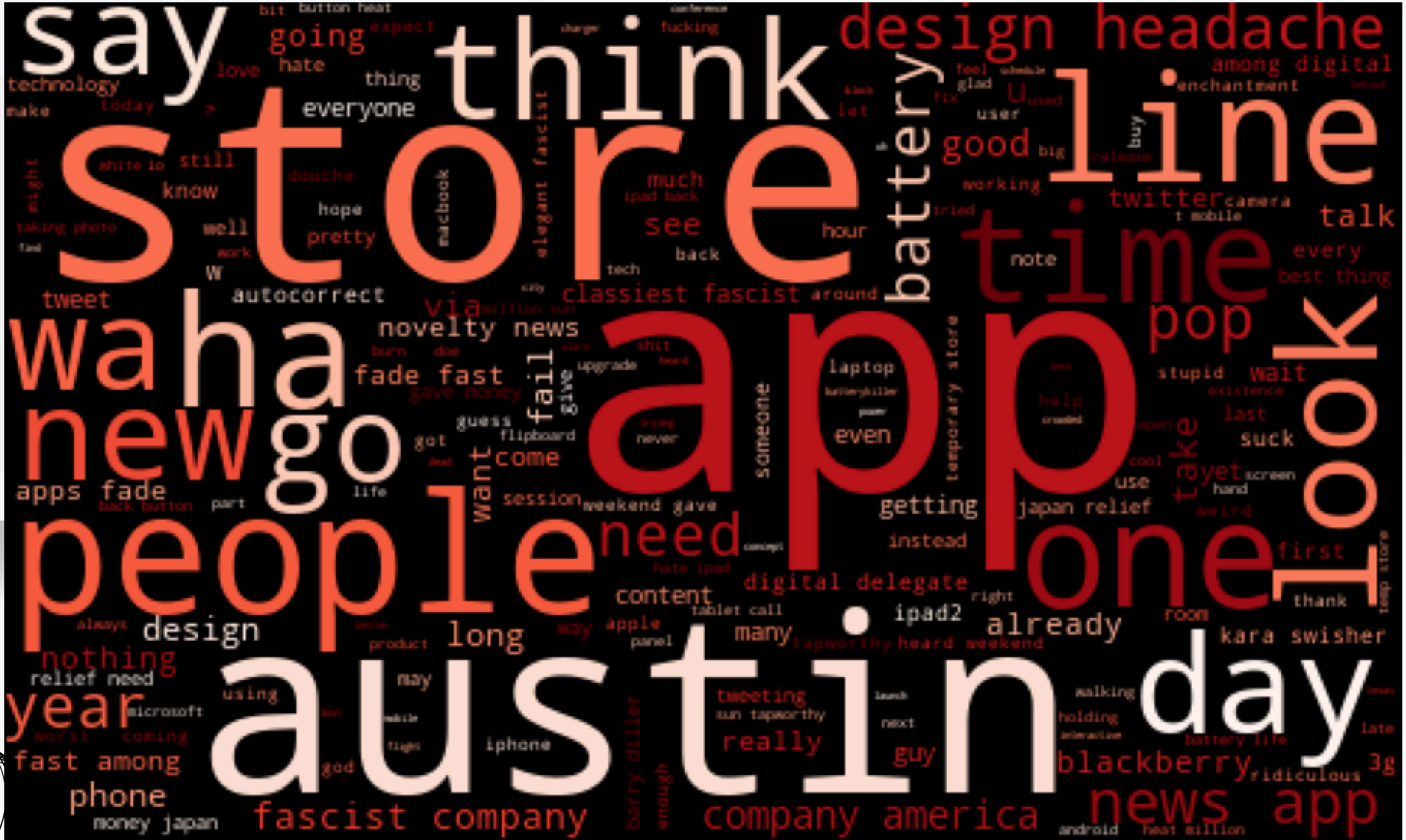
EDA INSIGHTS

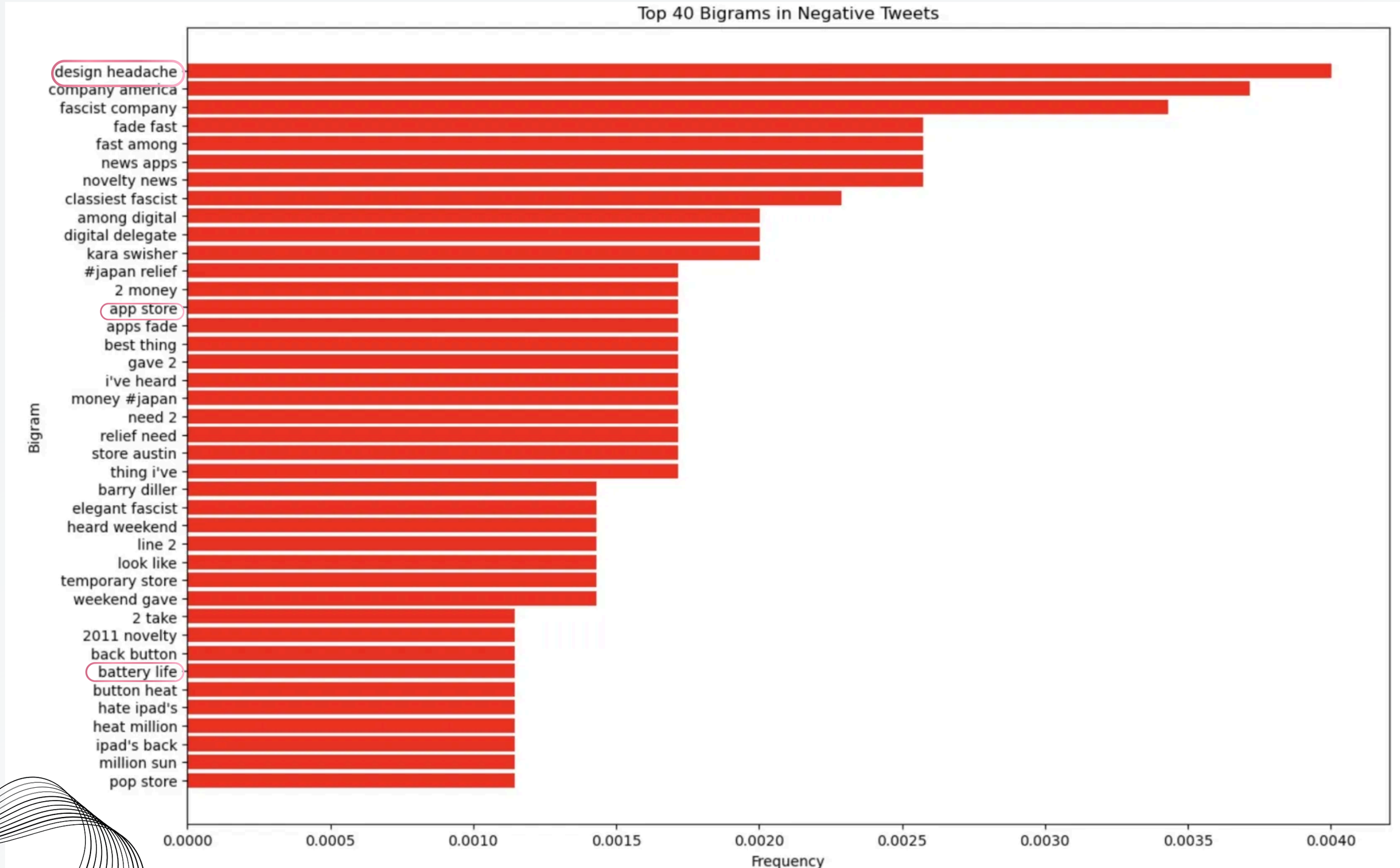
- Major class imbalance
- Only 16% Negative tweets



WORDCLOUD

- “Design”
- “Headache”
- “Battery”
- “App”
- “Store”




Top 40 Bigrams in Negative Tweets
Bigram
design headache
company america
fascist company
fade fast
fast among
news apps
novelty news
classiest fascist
among digital
digital delegate
kara swisher
#japan relief
2 money
app store
apps fade
best thing
gave 2
i've heard
money #japan
need 2
relief need
store austin
thing i've
barry diller
elegant fascist
heard weekend
line 2
look like
temporary store
weekend gave
2 take
2011 novelty
back button
battery life
button heat
hate ipad's
heat million
ipad's back
million sun
pop store
0.0000
0.0005
0.0010
0.0015
0.0020
0.0025
0.0030
0.0035
0.0040
Frequency

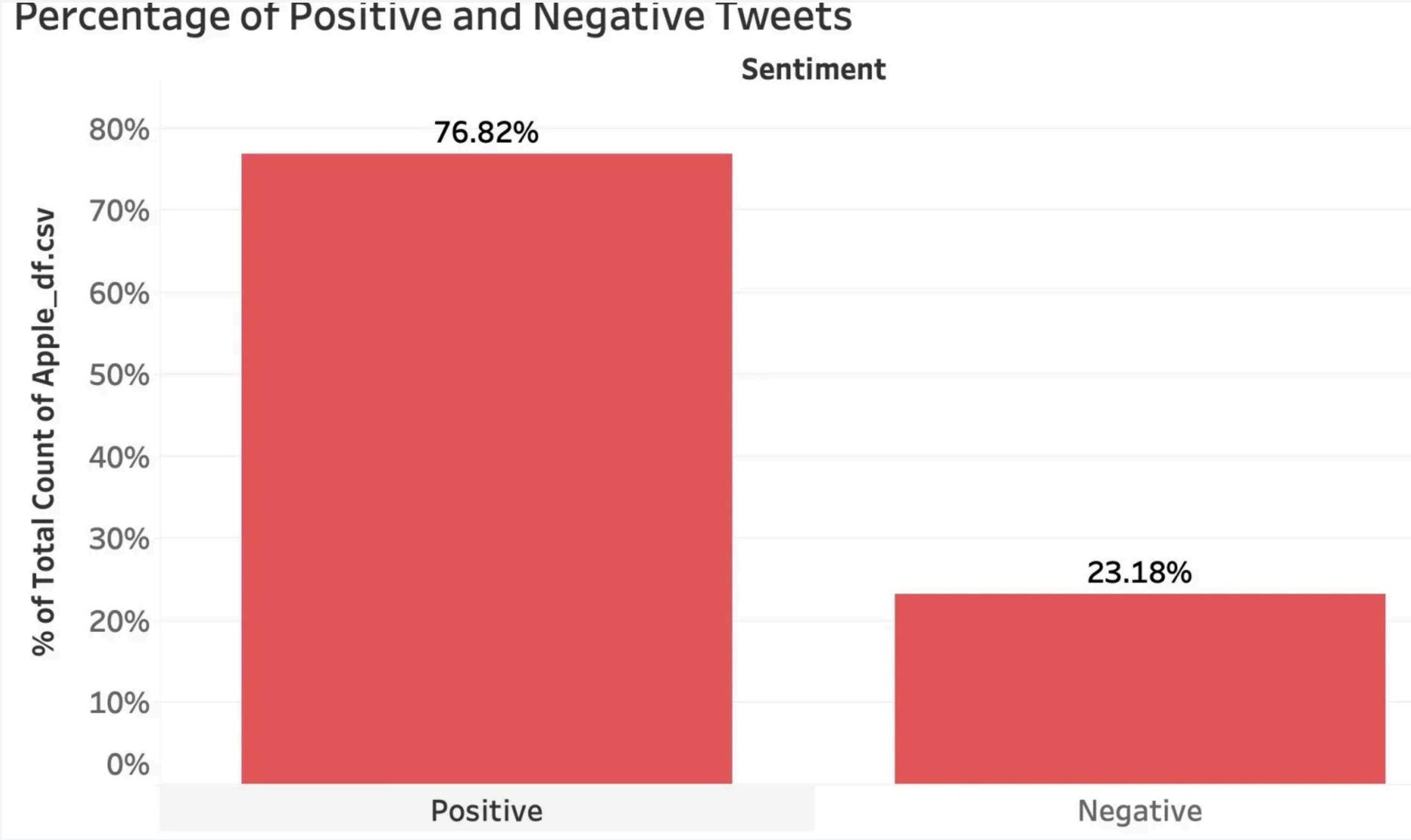
MODEL

- Model Results: **83%** accuracy in determining whether tweets express positive/negative sentiments towards Apple.

- Enhance model performance with a more balanced representation of both sentiments.

CLASS IMBALANCE

- Adding 200 negative tweets
- Balances our data and brings our negative tweets up to 23%



FINAL MODEL

- Model Results: **87%** accuracy in determining tweet sentiments towards Apple.
- Model demonstrates that balanced data yields better performance.

87%

RECOMMENDATIONS

Design Concerns:

Refine size, weight, and product durability

N°1

Battery Life:

Battery capacity
Battery charging alternatives

N°2

App Store:

Stricter guidelines for developers
Search + discovery features

N°3

FUTURE PROJECTS

LSTM or BERT for nuanced sentiment analysis

PROJECT 1

Diverse data sources
=
Broader insights

PROJECT 2

Track trends for changes over time

PROJECT 3

QUESTIONS?

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THANKS FOR WATCHING