

MATH513 Practical Presentation

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Introduction

- Samsung and Apple
- Flagship phones chosen
 - ▶ S20FE
 - ▶ iPhone12
 - ▶ S20

Tools Utilised

- Rstudio
- RTweet
- Twitter Developer API
- GitHub



SAMSUNG



Choosing Twitter for Analysis

- Open API Access compared to others
- Almost all data is public
- Advanced filtering and queries
- Generous Rate limiting

Hashtags

- @SamsungMobile - <https://twitter.com/SamsungMobile>
- @Apple - <https://twitter.com/Apple>
- @tim_cook - https://twitter.com/tim_cook

Data Cleaning and Feature Engineering

Data Cleaning

- Duplicate tweet and user observations were removed
- Tweet text and user bios were cleaned
 - ▶ Removed links, hash-tags, emojis, and user mentions

Feature Engineering

- Users were marked as potential bots
- User country was extracted from the location of their profile
- Tweets were marked as potential spam
- Hash-tags were extracted from the tweet text
- Product features were extracted from the tweet text
 - ▶ Display, Battery, Camera, Price, and 5G Capability
- An overall sentiment score was calculated for each tweet

Summary of Collected Data

Total Tweets: 73690 after data cleaning

Total Features: 5 (Display, Battery, Camera, Price, and 5G)

Table 1: Summary of Tweet Data

| Product | Number of Tweets | % Spam Tweets | % Feature Tweets |
|---------------|------------------|---------------|------------------|
| Galaxy S20 | 13147 | 3% | 20% |
| Galaxy S20 FE | 28923 | 19% | 19% |
| iPhone12 | 31620 | 13% | 7% |

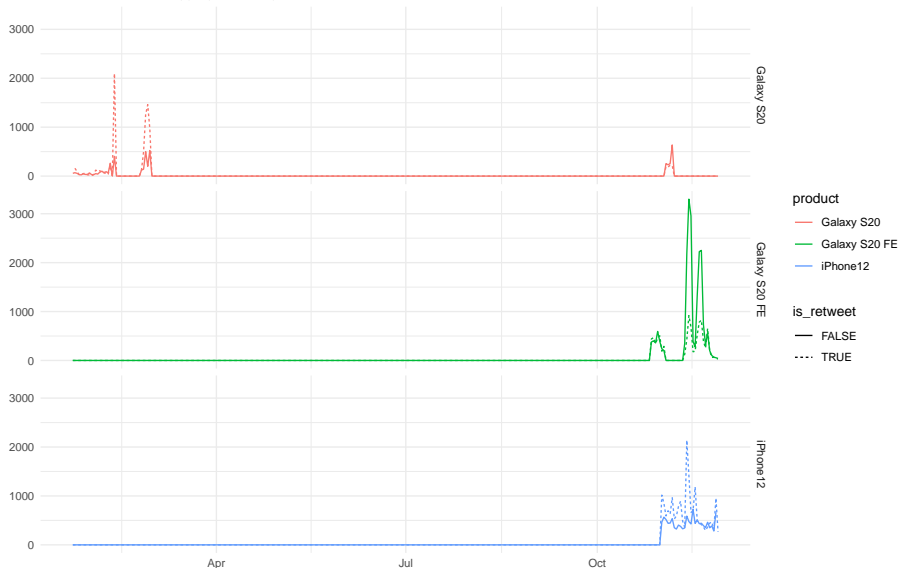
Table 2: Summary of User Data

| Number of Users | % Bot Users | Unique Countries |
|-----------------|-------------|------------------|
| 35051 | >1% | 163 |

Time Periods for Data Collection

Frequency of Twitter Statuses

Twitter status counts aggregated using 1-day intervals



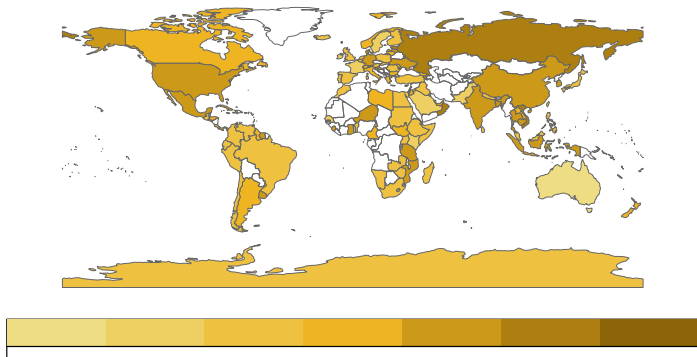
Overview of sentiment analysis

Choice of feature to analyse

Results - Sentiment Globally - Iphone12

6082 codes from your data successfully matched countries in
23 codes from your data failed to match with a country code
121 codes from the map weren't represented in your data

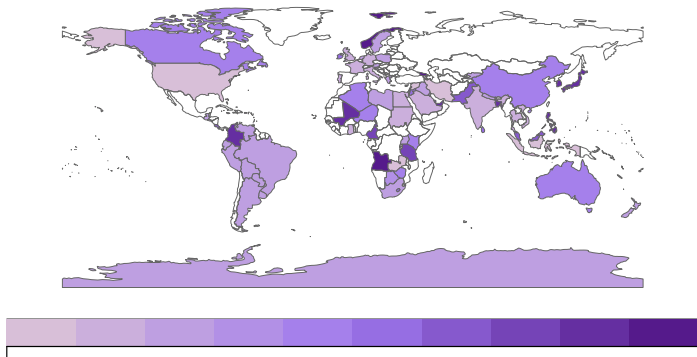
iPhone12 Sentiment by Country



Results - Sentiment Globally - S20FE

10474 codes from your data successfully matched countries i
2 codes from your data failed to match with a country code
164 codes from the map weren't represented in your data

Galaxy S20 FE Sentiment by Country



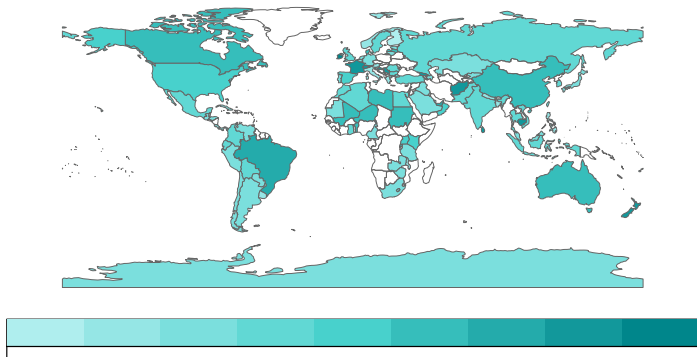
Results - Sentiment Globally - S20

4115 codes from your data successfully matched countries in

8 codes from your data failed to match with a country code

136 codes from the map weren't represented in your data

Galaxy S20 Sentiment by Country



Improvements & Further Study

Improvements

Google Maps API to have region filter

Look at mentions of apple in samsung and vice versa

Issues and overcoming them

- Extraction by date
- Duplication
- Time limits
- Foreign languages
-

Conclusions

- Twitter data provides up to date information for companies to analyse for customer feedback
- Data can provide useful information to guide product teams when analysed correctly

References

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