

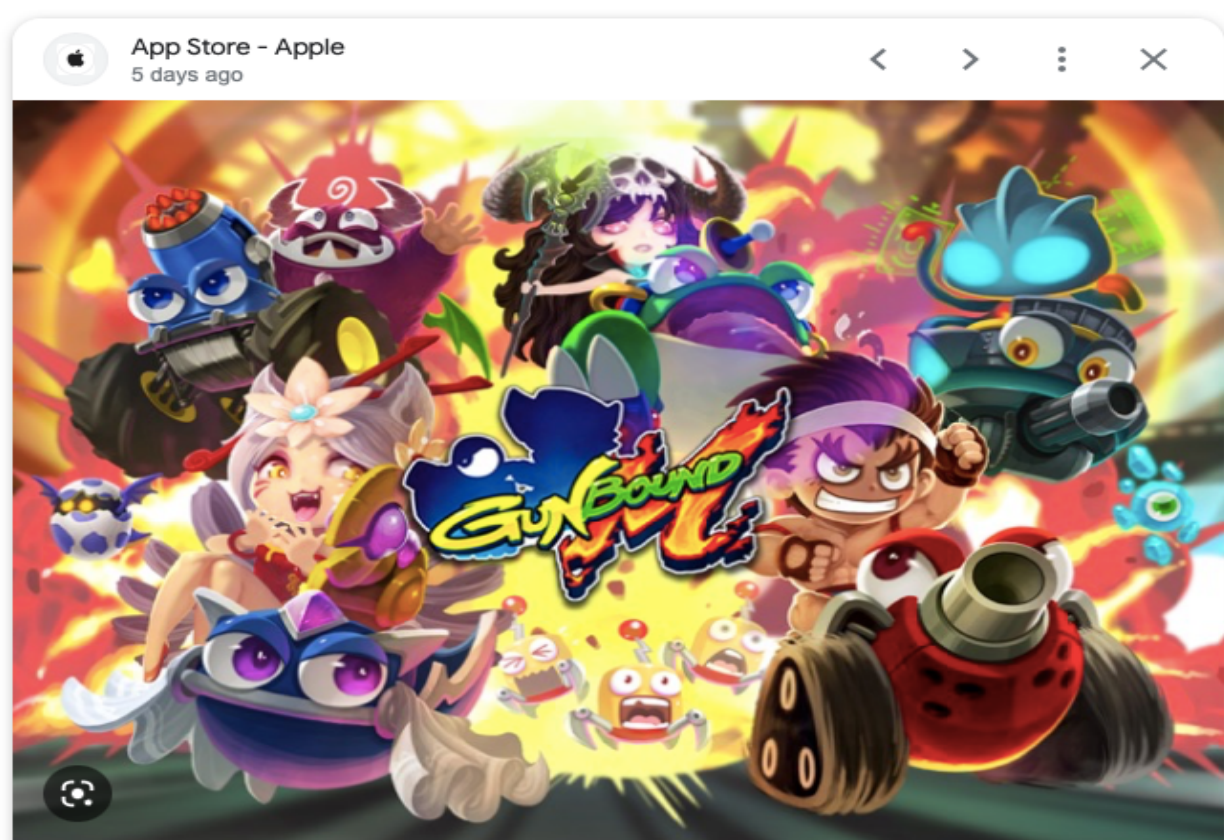
6341 Final Project

Abstract

The purpose of this original project is to apply *NLP Sentiment Analysis* methods to Reddit posts and gather their sentiment and subjectivity scores. My chosen subreddit (topic of interest within Reddit) is *GunboundM* because it is my favorite mobile game on my iPhone. I collected 1000 of the newest posts within the subreddit, applied Sentiment Analysis, and extracted the results. Overall, GunboundM subreddit posts showed an average sentiment score of 0.08 and average subjectivity score of 0.41.

Background

GunboundM is a cartoon turn-based shooting game where players select a vehicle to operate. Each vehicle has different weaponry such as lasers, bombs, or elementals (such as fire, ice, lightning). You can also add upgrades to your vehicle to increase attack or defense. The main goal of the game is to destroy your enemies vehicles 3 times to win using whatever strategies you would like.



GunboundM on the App Store

[Visit](#)

Victor Nava
BUAN 6341
Professor Koonjbearry

Project Methodology

To begin, I first had to obtain the Reddit public API to scrape Reddit posts. This involved a few steps.

- 1) I navigated to: <https://www.reddit.com/prefs/apps> to create a Reddit app
- 2) From the Create App Developer section at the bottom, I selected Reddit 'script' app
- 3) Once I entered the necessary details, my Reddit app was created
- 4) From my app, the client_id and client_secret was displayed which I would later use

Now that my Reddit script app was created, I could access the Reddit public API using Python package PRAW to authenticate me by using my credentials from Step 4 above. See below.

```
In [ ]: #Reddit Authentication Process
        pip install praw
        import praw

        reddit = praw.Reddit(client_id='YgPypc7ImM0XrP7aSlmd9A',
                             client_secret='Dd1KVNfGsQt1a1gZ0r3yAxQUuLmXvQ',
                             user_agent='MyRedditApp/1.0 by VictorNava - navavictor1992@gmail.com')
```

Now that I am authenticated with the Reddit public API, I can finally proceed with the Sentiment Analysis. For ease of computation, I chose the 1000 newest posts to scrape from the GunboundM subreddit to implement Sentiment Analysis.

```
In [ ]: from textblob import TextBlob
        from tqdm import tqdm
```

TextBlob is a Python library that has pre-trained sentiment analysis component to quickly obtain the sentiment and subjectivity of words. Quite useful when scrapping 1000 posts on Reddit! Lastly, tqdm is a Python library I decided to use to show a progress bar on how the scraping/sentiment analysis processing was going.

My Sentiment Analysis code using these 2 packages is below:

Victor Nava
BUAN 6341
Professor Koonjbearry

```
In [59]: #Specifying my subreddit and scraping the 1000 newest posts on GunboundM
subreddit = reddit.subreddit('gunboundm')
posts = subreddit.new(limit=1000)

# Initialize lists to store the results
sentiments = []
subjectivities = []

#analyze the sentiment of each post
for post in tqdm(posts, desc="Scraping posts", unit=" post"):
    title = post.title
    body = post.selftext

    # Combine the title and body text
    text = title + " " + body

    # Perform sentiment analysis using TextBlob
    blob = TextBlob(text)
    sentiment = blob.sentiment.polarity
    subjectivity = blob.sentiment.subjectivity

    # Append the results to the 2 lists initialized earlier
    sentiments.append(sentiment)
    subjectivities.append(subjectivity)

    # Pause for 1 second to avoid having Reddit block my IP for excessive API usage
    time.sleep(1)

# Calculate the average sentiment and subjectivity
avg_sentiment = sum(sentiments) / len(sentiments)
avg_subjectivity = sum(subjectivities) / len(subjectivities)

print("Average Sentiment: {:.2f}".format(avg_sentiment))
print("Average Subjectivity: {:.2f}".format(avg_subjectivity))
```

Scraping posts: 994 post [16:49, 1.02s/ post]

Average Sentiment: 0.08
Average Subjectivity: 0.41

Victor Nava
BUAN 6341
Professor Koonjbearry

Analysis

Sentiment scores range between -1 and 1, where -1 means the text analyzed is extremely negative, 0 means its neutral, and 1 means the text is extremely positive.

Subjectivity scores range 0 and 1, where 0 means the text analyzed is completely factual/objective and 1 means the text is completely subjective.

With respect to my results: my Average Sentiment of 0.08 I obtained is basically 0, which implies that people posting on GunboundM subreddit are relatively neutral towards the game. The Average Subjectivity of 0.41 is close to 0.5, which means that there is a balance between objectivity and subjectivity in the posts to the GunboundM subreddit.

Conclusion

To be honest, I was quite surprised by the results. GunboundM is an intense game for those who play and most have strong opinions about the game (including myself!). Still, I think I can attribute this neutrality sentiment on the fact that we GunboundM players love the game despite our positive/negative emotions about it sometimes.

In closing, I learned a lot with this Sentiment Analysis Project. Chiefly, scrapping data via an API and applying Sentiment Analysis methods towards this scrapped data. I look forward to applying this knowledge towards my future career.