CSE508: Information Retrieval Project Proposal

Title: TweetPress

Problem Statement : We are working on a system which performs sentiment and context analysis on a tweet and with the help of keywords and relevant hashtags, it helps in finding relevant information and texts over the web.

Literature Review :

Sentiment and context analysis of tweets have gained significant attention in recent years due to the massive growth of social media platforms and the increased use of Twitter as a tool for communication and information dissemination. In this literature review, we will explore the research related to sentiment and context analysis of tweets and their applications in various domains.

The sentiment analysis of tweets aims to identify the polarity of the text expressed in the tweet, i.e., whether it is positive, negative, or neutral. Researchers have employed various approaches, such as lexicon-based, machine learning-based, and hybrid approaches, to perform sentiment analysis. Lexicon-based approaches rely on predefined dictionaries of words and their associated polarity scores, whereas machine learning-based approaches use algorithms such as Support Vector Machines (SVM), Naive Bayes, and neural networks to predict the sentiment of tweets. Hybrid approaches combine both lexicon-based and machine learning-based techniques to improve the accuracy of the sentiment analysis.

The context analysis of tweets aims to understand the meaning of the tweet in a given context. Researchers have explored various aspects of context analysis, such as identifying the topic of the tweet, the sentiment of the tweet in the context of the discussion, the stance of the tweet towards a particular entity, and the sentiment towards a particular event or issue. Researchers have employed techniques such as topic modeling, entity extraction, and event detection to perform context analysis.

Applications of sentiment and context analysis of tweets can be seen in various domains, including marketing, politics, and health. In marketing, sentiment analysis of tweets can help businesses to understand customer sentiment towards their products and services and adjust their marketing strategies accordingly. In politics, sentiment analysis of tweets can help to understand public opinion towards political parties, candidates, and issues. In health, sentiment analysis of tweets can help to identify trends and patterns related to public health issues and assist in public health interventions.

In conclusion, sentiment and context analysis of tweets have become an essential tool for understanding the public's opinion and sentiment towards various entities and issues. The research in this area has shown that various techniques can be employed

to achieve accurate sentiment and context analysis, and the applications of this research can be seen in various domains. Further research in this area can help to improve the accuracy of sentiment and context analysis and expand its applications to other domains.

Baseline Results:

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PS C:\Users\lenovo\OneDrive\Desktop\project IR> python -u "c:\Users\lenovo\OneDrive\Desktop\project IR\CSE508_Winter2023_A1_5-main\twitter_data.py"
You can search or Analyse Sentiment (type 'search' or 'Analyse Sentiment' respectively) or type 'stop' to exit
Enter your query: search
Enter the query terms in order here: beautiful home
Enter the query operations in order here: and
['and'] ['beautiful', 'home']
['AND']
beautiful AND home
Query 1 beautiful AND home
Number of tweets retrieved for query 1: 1
local ID of tweets retrieved for query 1: [3]
Twitter ID of tweets retrieved for query 1: [1500010328758923264]
Number of comparisons required for query 1: 2
Enter the query terms in order here: stop
You can search or Analyse Sentiment (type 'search' or 'Analyse Sentiment' respectively) or type 'stop' to exit
Enter your query: Analyse Sentiment
Enter the local ID you want to analyse sentiment for:  1 5y4re
tweet ID:  1500028396436340736
['way', 'free', 'qa', 'haha']
{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound': 0.0}
You can search or Analyse Sentiment (type 'search' or 'Analyse Sentiment' respectively) or type 'stop' to exit
Enter your query:
ok, bye!
PS C:\Users\lenovo\OneDrive\Desktop\project IR>
```

We have created an inverted index for the important words that exist in the tweets using tweet ids. As per the query entered, we run a search through the tweets and retrieve the suitable results.