International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 04 | Apr 2021 www.irjet.net p-ISSN: 2395-0072

Brand Monitoring System

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Abstract - *Brand Monitoring System is an efficient tool built to find out the polarity of tweets, that is, to find out whether the tweet is a positive feedback of a brand's product or a negative one. Due to the emerging technologies in the past few decades, access to a faster internet has become quite easier among the people. Also, the need to be on various social networking platforms such as Twitter, Instagram, Quora, Facebook, Snapchat has also augmented in recent times. People openly express their opinions about a specific topic or a brand on such social networking platforms. These positive or not so positive opinions of a specific brand or its product need to be reached out to the appropriate authorities in order to make the required modifications in their products so as to make that product lucrative in the long run. The brand can also be assisted by this tool in planning the strategy of the launch of their upcoming products. Keeping these things in mind, we have developed our Brand Monitoring System using Natural Language Toolkit, popularly known as NLTK. The various features of this system subsume finding which product is more popular at a specified geographical location, statistically determining which product is trending at a given period of time and also to monitor the consumer's feedback on the recent modifications made in the products.*

***Key Words*: NLTK, Tweepy, Sentiment Analysis, Regular Expression, TextBlob**

1. INTRODUCTION

Now-a-days, easy access to a high speed internet has led to a considerable increase in the popularity of various social networking platforms such as Facebook, Instagram, Twitter, etc. Among these social networking platforms, "Twitter" is the most trending platform in today's times. These social networking platforms not only allow people to connect with their friends and acquaintances, but also provide them with a powerful platform to speak out their opinions- either good or bad- about a specific topic or a brand.

1.1 Need and Motivation

Whenever any brand launches any of their products in a market, the success of that product majorly depends on how that product is being perceived by the consumers. The consumers exploit the product and feel a need to express their opinions based on either good or bad experiences they had with that product. They fulfil this need of expressing opinions about the products by posting it on varied social networking platforms, mainly Twitter. Therefore, a brand needs an efficient tool to process these large sets of data being generated everyday and analyse them in order to come to a final verdict whether their product is being appreciated by their consumers or not. This will assist the brand to make necessary modifications in their products in order to make their product affable to its consumers and also help them to plan the strategy of the launch of their next product. [1]

2. REPORT ON PRESENT INVESTIGATION

Sentiment140:

This is an online tool for scrutinising the Tweets obtained by the Twitter APIs. This tool helps in determining the polarity of reviews of a brand or product on Twitter. Sentiment140 basically determines whether the specified brand or product is perceived positive, negative or neutral by its consumers. This was created by three Computer Science graduate students at Stanford University with a main motto of analysing Spanish and English language tweets. [2]

Brandwatch Sentiment Analysis:

Brandwatch is a commercially available sentiment analysis tool. This tool has been developed by a team of PhD qualifiers in the United Kingdom. Through this tool, they determine the polarity of a review, that is, whether the review is positive, negative or neutral.[3]

Adobe Social Analytics:

Adobe Social Analytics analyses the effect of various social networking sites on businesses by comprehending how the discussions on various social networking sites affect the performance of a product in a market. After acquiring the discussion data and then analysing it cautiously, it correlates the effect of those discussions with key business metrics such as revenue and brand

value. Moreover, it also keeps a keen eye on how the customer care employees interact with their product consumers on social networking sites such as Facebook. Adobe Social Analytics uses a natural language processing algorithm to implement sentiment analysis.[4]

TweetFeel:

TweetFeel is also a web tool that analyses the polarity of the tweets obtained by Twitter APIs. It gathers real time data on Twitter and bifurcates that data into positive or negative in real time. It makes use of a machine learning algorithm in order to determine the polarity of tweets.

Social Mention:

As the name suggests, Social Mention is a social media analysing tool in order to determine whether the reviews or feedback about a specific product or brand are positive or negative. This tool allows the user to define a time period in which the user data has to be analysed.

3. AIM AND OBJECTIVES

3.1 Aim

Our aim is to create an efficient tool to generate results that will facilitate various brands and startups by giving them an idea about how their brand's products have been perceived by their consumers based on the consumers' reviews on varied social media platforms, mainly Twitter.

3.2 Objectives

- To graphically represent the polarity of the consumer's reviews about the products based on the data acquired by the tweets.
- To give a statistical result about which product of a brand works better at a given period of time.
- To determine the popularity of a specific product of the brand at a specified geographical location.
- To examine the consumer's feedback about the recent upgradations or changes that a brand has brought in their products.
- To determine which product is trending the most.
- To assist the brand in planning the strategy of the launch of their next product.

4. PROPOSED SYSTEM

4.1 Explanation

Process Flow is as follows:

Step1:- Open Application:

-Enter Product/Brand name which want to monitor.

Step2:- Database Connection:

-Acquire Database Connection

-Search for Brand Name Table if doesn't exist Create One

-Database Contains Three Types of entities:

1. Text Object:

- String of text

-Polarity

- Subjectivity

- Id str

-Created At

2. User Object:

- User location

- User description

-User created At

-User's followers count

3. Geo Object:

-Latitude

- Longitude

Step3:- Getting Stream of Tweets:

-Connect to twitter API Tweepy

-Using Tweepy's Stream listener get stream of tweets

Step4:- Sentiment Analysis:

-Clean the Text from different unwanted data like emojis etc.

-Using TextBlob, Python Library extract polarity and subjectivity of text

-Using Regular Expression in python remove URLs, emojis etc

-Tract most frequently used tokens or key words using NLTK

Step5:- Visualisation of result:

-Display result on dashboard in the form of bar graph, pie chart

-Also display geographical segment recognition on map

4.2 System Design

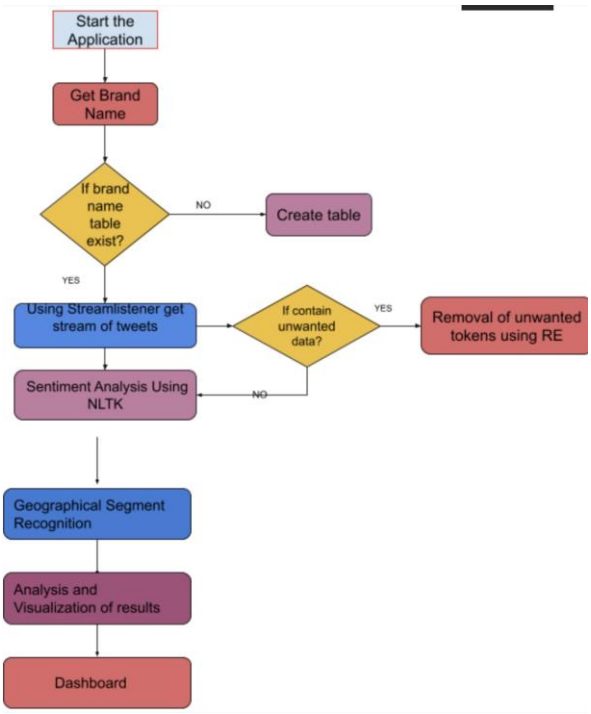

FIG 1: Brand Monitoring System Design

5. SCOPE AND FEASIBILITY

5.1 Scope

Brand Monitoring System can assist various brands to understand and scrutinise how their company's product has been perceived by a mass of people or consumers. Therefore, it can be used for social media monitoring, to get an honest customer feedback of the product and subsequently managing the reputation of a brand.

5.2 Feasibility:

5.2.1 Technical Feasibility:

Python is a popular object-oriented programming language that has been used by us .Also, we have used PostgreSQL or popularly known as Postgres which is one of the most powerful, open source object-relational database to securely store and scale the complicated data obtained from Twitter API, i.e., Tweepy.

5.2.2 Economical Feasibility:

Economic feasibility is none other than the cost effectiveness of the project. Twitter social-networking platform allows the developers to create a developer account free of cost and also allows them to access their twitter data using twitter APIs like Tweepy. As we are working mainly with open source software(Python Libraries). Due to these reasons, it will be considerably cost effective.

5.2.3 Operational Feasibility:

Operational Feasibility includes how efficiently the implementation of the working model of the final product is done. The solution uses python libraries and also Natural Language Toolkit. It can be deployed to any platform. It can be used by any brand or product to monitor their reviews among people and analyse their product accordingly.

6. MODULE

6.1 EXPLANATION

This tool comprises of following major modules:

1. Tweet Collector:

The basic purpose of Tweet Collector is to assemble data from social media to local source for simplicity of analysis. For this we have used twitter API named Tweepy to gain access to twitter data. Twitter offers a different set of streaming API which gives access to the developer to a large stream of twitters' tweet data.

2. Sentiment Analysis Tool:

The basic purpose of this tool is to analyse user sentiments and get the correct polarity of sentiments. Data to this module is passed by Database which has been collected by the tweet collector module. Also every input is classified into positive negative and neutral categories. Similar or common patterns in text are also found in this module. Natural Language Toolkit is used in this module

3. Dashboard:

The basic purpose of this module is analysis and visualisation of results. Line graph and a pie chart is provided with geographical segmentation to analyse polarity of reviews at specified geographical location.

6.2 DESIGN

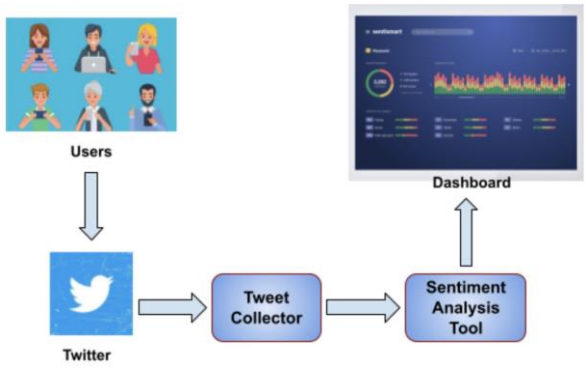

Fig 2: Module Design

7. FUTURE SCOPE

From a future perspective, extension of this project can be done by implementing some advanced machine learning algorithms in order to increase the efficiency and accuracy of the results obtained. Moreover, one can take the age input of the person tweeting a tweet to help the brand to analyse which of their products work better among a specific age group of people. Extension of this project to analyse tweets in one's own native or regional language other than English is also one of the possibilities of future enhancement. In addition to that, a user-friendly web application can be developed making it convenient for the users to input keywords and get analysed results.

8. CONCLUSION

Our project- Brand Monitoring System- is a consequence of today's emerging need. Thus we have a faith that various brands and startups can be largely profited by our tool in today's times as well as in the long run in acquiring the customer feedback on their previous products and thus assist them to make the necessary modifications in their products and also to cautiously analyse the market in order to develop a strategy in the launch of their upcoming products.

9. ACKNOWLEDGEMENT

No Project is ever completed without the guidelines of those experts who have already traded this past before and hence become master of it. We would like to take this opportunity to take all those individuals who have helped in visualising this project. We are grateful to our

Complete our project successfully .We would like to express our sincere thanks to our H.O.D. Prof. Suvarna Pansambal for giving us valuable guidance. We would like to thank Prof. Mahendra Patil who was also our project guide for giving us valuable guidance and timely suggestions. Last but not the least we would like to thank all the members of the Computer Engineering Department who helped us directly or indirectly in completing our project.

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