

Sentiment analysis of Covid-19 tweets and an dashboard for tracking Covid-19's spread.

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Abstract

The COVID19 outbreak has had a huge economic impact and has transformed people's lifestyles all across the world. To mitigate the impact of the COVID 19 epidemic, many people have already died, the job market has been impacted, and people's lifestyles have been altered. In this paper, we identified the public sentiment and opinion about the COVID19 vaccine based on Twitter content. Despite being vaccinated, there are disagreements about whether the COVID19 vaccine is safe, and some people are skeptical about vaccination. In this study, we analyzed tweets to classify emotions Regarding vaccination attitudes, as well as the vaccinations available, to understand the general perception of the COVID19 vaccine, and to respond to pandemics. Continuous monitoring of outbreaks has become important to make accurate decisions. Therefore, these reports lack proper data display and visualization and pose a real challenge for monitoring the status of COVID 19.

Introduction

COVID19 expanded globally since the first cases were reported in December 2019 [4], and the illness was labeled a Public Health Emergency of International Concern (PHEIC) on January 30, 2020 [2]. Daily, a large number of reports on the status of COVID19 are issued; pulling relevant insights from these reports is dependent on the quality of data as well as how well the data is presented and represented. The event and promotion of a vaccination are crucial for stopping the COVID19 outbreak from spreading further and decreasing the severe medical tension. Simple descriptive analyses of vaccine-related Twitter data have been undertaken in a number of studies to measure people's attitudes toward vaccinations and identify sentiment, public opinion, and subjectivity. Topics, Information transfer between people, and hence the most influential people for a certain sentiment, role models, and community discussion concerning vaccination. An interactive online dashboard has been created to deal with the problems in the present COVID19 reports published by the federal office of Health. The dashboard includes various interactive charts and tables that reflect the temporal and geographical spread of COVID19 cases

Literature survey

In [2], the author says that his research discusses Twitter Sentiment Analysis for monitoring and predicting Covid-19 Vaccine-related attitudes and methodology they used is Bernoulli NB, Random Forest, and Linear SVC. In [11], the author says that according to his findings, most people's attitudes regarding the three vaccinations are neutral or positive, with just slight negative feelings which he concludes by using TextBlob and Naïve Bayes classification to highly improve the accuracy. In [8], the author uses Classification of tweets which is done by CNN and RNN Classifier Sentiment analyzers used here are Textblob and Vader and concludes that They have used 4-5 sorts of classification that will make the project more accurate. The very best accuracy is achieved by CNN and RNN classifiers. The only Limitation during this work is that they don't analyze images .10% of the Twitter posts contain photos .In [6] author uses Logistic Regression ARIMA prediction and SEIR model and he uses NAR dynamic neural network model to forecast the next three months. In [9] author proves Moderna scored the lowest on the

negative sentiment value when compared to other vaccines, implying that it is the simplest impression with this analysis it is clear which vaccine is leading during a particular entry and he used Stream API to collect the data and Textblob library for sentiment Analysis

Objective

We aim to research the views and attitudes of voters within the country towards vaccines and covid19. We have tended to apply the Twitter API to gather tweets concerning the immunogen since it began. Immunogen uptake will be aided by addressing immunogen opposition and encouraging immunogen confidence through learning about people's feelings and ideas about immunization. The bulk of Twitter users wished to understand whether this existing immunogen will stop the unfolding of the COVID-19. As per a recent study In Some elements of the country, people's negative emotions square measure comparatively High, and their temperament to induce immunization is comparatively Low. Efforts to extend confidence within the effectiveness of the COVID-19 immunogen And to extend an individual's temperament to safeguard others through vaccination could also be a key to promoting immunogen acceptance. To give individuals AN estimate of the quantity of Covid cases in several states of the Republic of India. Further, to use constant information and make a demographic illustration to form it easier for individuals to know, our interactive dashboard monitors the unfolding of covid-19

Methodology:

Sentiment analysis Methodology.

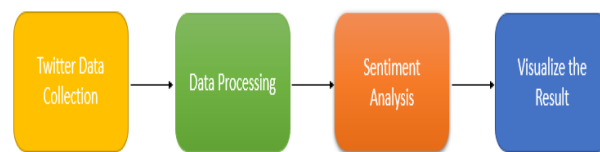


Figure 1: Process of Data gathering and performing analysis

First, various tweets related to people's sentiments on Covid-19 were collected with the help of a **Twitter API**, Tweepy. Once extraction is done, move ahead with data **pre-processing**, which involves cleaning of data and making it ready for further steps removing all types of unwanted data. Data pre-processing involves cleaning null characters, and whitespaces, converting the alphabets into the same case, filtering the tweets done in various languages, etc

Sentiment Analysis

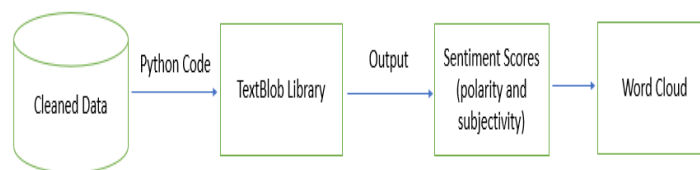
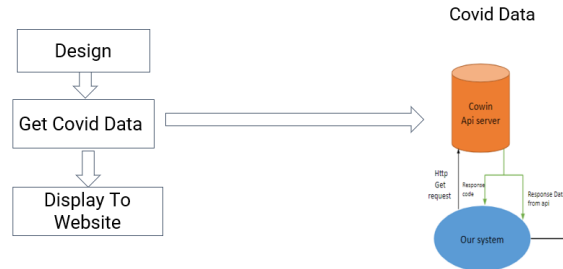


Figure 2: Process of Sentiment Analysis

For sentiment analysis we have used the **text blob** python library which helps us to calculate the sentence's polarity text blob gives us two things: polarity and subjectivity. Polarity is a great way to calculate positive, negative and neutral words. the range of polarity is ranging from (-1 to 1). After calculating with the help of word cloud library results are shown.

Pattern Analyzer (based on the pattern library) and NaiveBayes Analyzer are two sentiment analysis implementations in the textblob. sentiments module (an NLTK classifier trained on a movie reviews corpus). For frontend we used React js. and for Backend we used Flask. using flask we get the data from tweepy and analysis done afterwards.

Architecture for Covid data



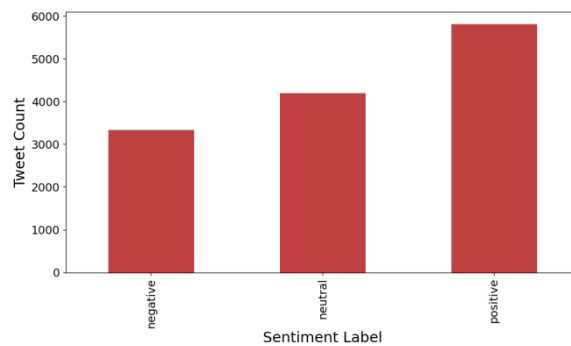
First the design of the page was made by softwares like figma and adobe xd, after the design we made a get request to covid19 api then in response we got json data and then we displayed the data in our website in the form of table.. once we got the data then we have visualize it with the library called react-chart.js and it is also displayed to our website.

Conclusions:

In this study, sentiment and opinion analyzed about 15,000 tweets about the COVID19 vaccine. The Twitter platform used in this study could be a valuable tool for public health promotion to build vaccine acceptance and reduce vaccine hesitancy and opposition.

The findings presented here regarding vaccine comments suggest that anti-vaccination accounts on Twitter are partly automated content-generating Twitter bots as well as activists. Politician, author, and artist. Additionally, public health authorities can work through Twitter and other media to increase positive messaging, reduce negative and anti-social messaging, and proactively suspend anti-social accounts. Vaccinate like bots to encourage and

Result :



china (accessed Oct.02, 2020).

[5] R. Dumre, K. Sharma and K.Konar, "Statistical and Sentimental Analysis on Vaccination against COVID-19 in India," 2021 International Conference on Communication information and Computing Technology (ICCICT), 2021, pp. 1-6, doi: 10.1109/ICCICT50803.2021.9510179.

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[12]<https://covid19.who.int/>

[13]<https://www.mygov.in/covid-19>

[14]<https://www.worldometers.info/coronavirus/>

[15]<https://apisetu.gov.i>

Pasting figure for more clarity

Figure 1:



Figure 2:

