

(i) Introduction: The project is aimed at creating an end-to-end Information Retrieval system. The goal of this project is to successfully crawl tweets from Twitter, index them and then create a graphic user interface allowing a user to search tweets. Furthermore, the project contributes to analyzing the corpus informing the user about the impact.

(ii) Platform and Tech-Stack:

Platform	Tech-Stack
Front-End	Angular JS, HTML, CSS
Back-End	Python, Flask
Search-Platform	Solr, Mongo DB
Analytics Visualization	Highcharts
News Scraping	newsapi.org
Server Instance	Amazon EC2
Sentiment Analysis	AWS Comprehend

(ii) Methodology :

- Search
 - The IR system allows the user to search words, phrases, hashtags, etc. It offers a rich, flexible set of features for search.
- Multilingual Search
 - The search engine allows the user to enter multilingual keywords.

- Dynamic Search Analysis
 - Sentiment Analysis: The user can view the sentiments(Positive, Neutral, Negative, Mixed) of the fetched tweets. For sentiment analysis, we have used Amazon comprehend to calculate the sentiment scores.
 - Top Hashtags: Based on the search results we are calculating the TFIDF of all the hashtags present in the fetched tweets. We are displaying the top hashtags based on the TFIDF score as Word Cloud.
 - Topic Analysis: Similarly we are also displaying top topics as Word Cloud based on fetched tweets. The top topics are decided based on the TFIDF score.
- Vaccine Hesitancy and Misinformation.
 - We ran analytics on our corpus through an open-source dataset of keywords for vaccine hesitancy and misinformation spread on Twitter. Later we have calculated the top hashtags and keywords in our datasets based on these tweets in the corpus. The results obtained were better and accurate enough than training an in-house model to detect the same.
- News Articles:
 - Based on the searched tweet query, users can also view the relevant news articles.
- Faceted Search:
 - We have provided various filters on the left side of the page for performing faceted searches.
 - Users can filter results based on POI, Country, Language, and sentiment.

Sample screenshots

Not Secure — 3.142.94.110

Team Brute Force

View Search Analytics **View Corpus Analytics**

Search covid

POI ONLY

Filter by Person of interest

Filter by Country

Filter by Language

Filter by Sentiment

Twitter User Sep 22, 2021

COVID can be transmitted without symptoms. COVID can be transmitted without symptoms.

Twitter User Sep 17, 2021

Covid tests hurt more than covid vaccines.

Twitter User Sep 23, 2021

First dose of covid vaccine #covid #covidvaccine #Pfizer

Twitter User Sep 22, 2021

Te odio vacuna del COVID, te odio COVID.

Twitter User Sep 23, 2021

@oriononearth @AHS_media Covid kills many people. Long Covid can disable people. Covid is air borne and as contagious Chicken Pox. The Covid vaccines greatly improve your chances of not dying from COVID 19. No vaccine is 100%, Hospitals are overloaded by Covid. Any question?

Twitter User Sep 21, 2021

Starmer says Boris Johnson appears to have broken law over No 10 Christmas quiz
The Guardian on MSN.com | Dec 12, 2021

Vaccinated contacts of people with Covid told to test daily for a week
The Guardian | Dec 12, 2021

Covid contacts told to take daily rapid tests
BBC News on MSN.com | Dec 12, 2021

President Biden's job approval sinking on inflation, crime and COVID: POLL

Result Sentiment Scores

Sentiment	Percentage
Positive	6.3 %
Negative	23.7 %
Mixed	3.5 %







