



Sentiment Analysis of COVID-19 Vaccine Tweets

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Data

- ▶ COVID-19 Vaccine Tweet Dataset.
 - ▶ Collection of tweets since **Nov-01-2020 till Apr-01-2021**
 - ▶ Include Pfizer, Moderna, Covaxin, Sinovac, Sputnik, and J&J
 - ▶ 10% sample contains 6.7M tweets with –
 - ▶ User_name
 - ▶ User_location
 - ▶ Date
 - ▶ Tweet text
 - ▶ Hashtags
 - ▶ Etc.....



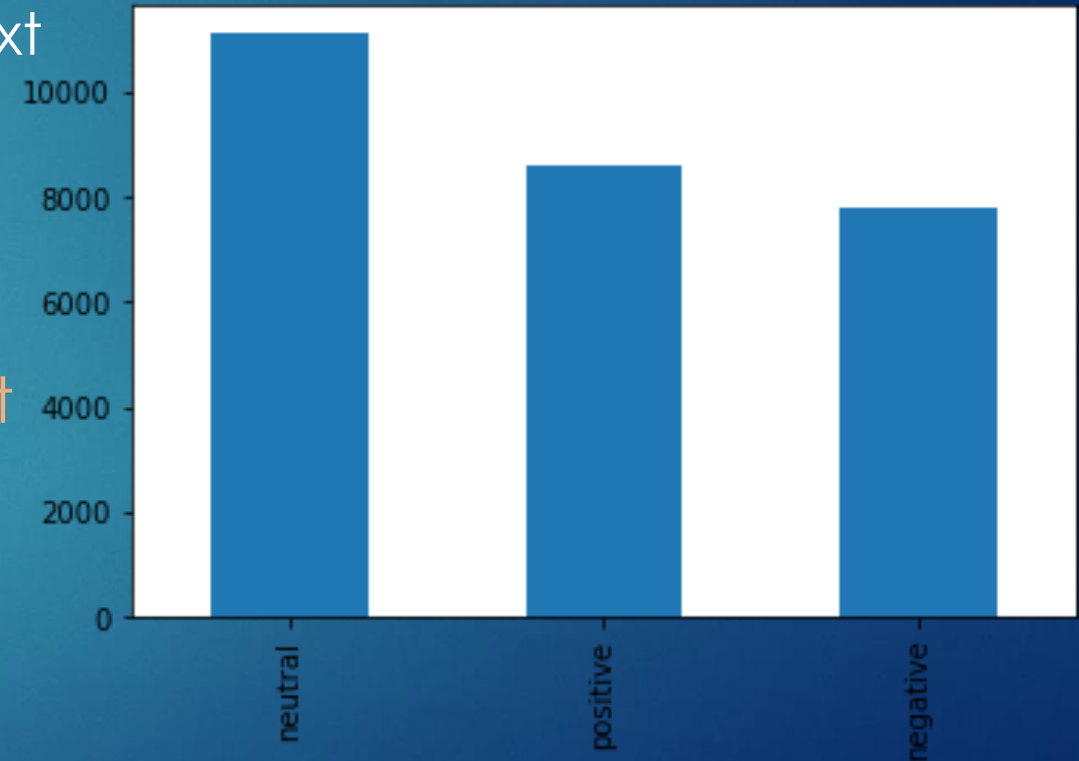
Data Contd...

► Twitter Sentiment Dataset

- Provided by twitter for Kegg competition
- Existing sentiment labels for tweet text
 - Neutral, Negative, Positive
- Model Training

► COVID-19 Vaccine Progress Dataset

- Country
- Vaccine
- Vaccination Counts



Data Cleaning & Preparation

- ▶ Removed –
 - ▶ URLs
 - ▶ Emails
 - ▶ Newline characters
 - ▶ Single Quotes
- ▶ Label Encoding
- ▶ Tokenization/De-tokenization
- ▶ Sequencing
- ▶ Splitting to Test and Train

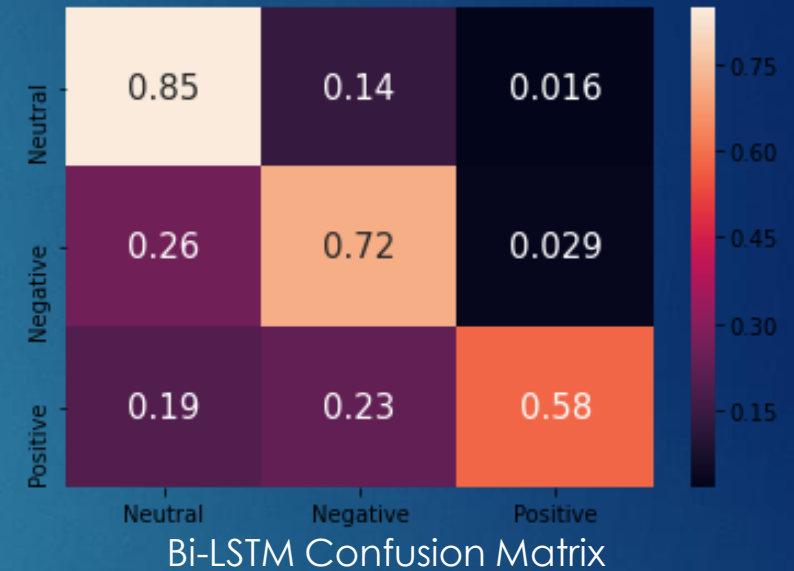


Methodology

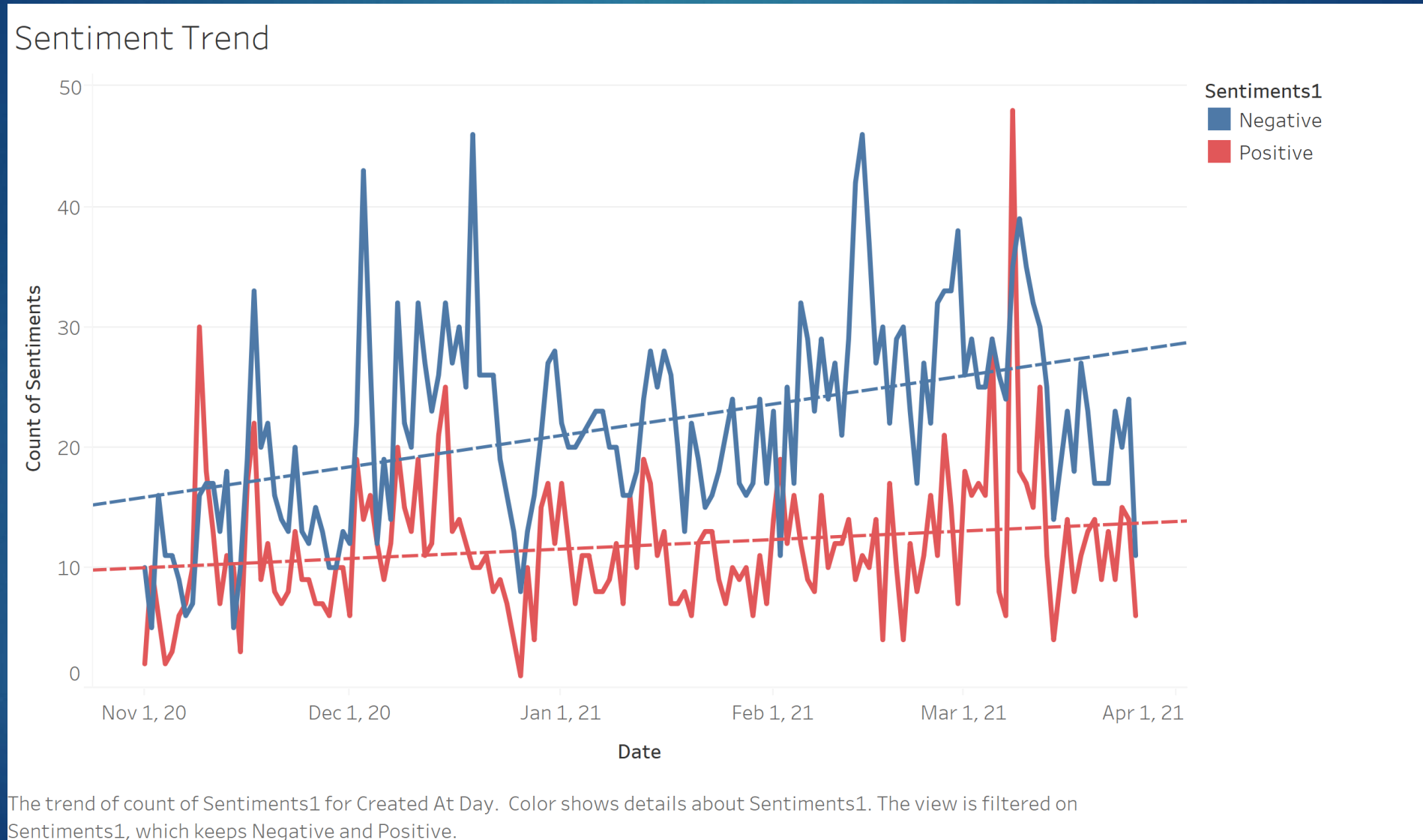
- Dataset with existing sentiment labels is used to train.

Algorithms	Activation	Batch Size	Optimizer	Accuracy
LSTM	Softmax	3	Rmsprop	71.8%
Bi-LSTM	Softmax	3	Rmsprop	74.4%
1D CNN	Relu	3	Rmsprop	61.5%

- Bi-LSTM was implemented on COVID-19 tweet dataset.



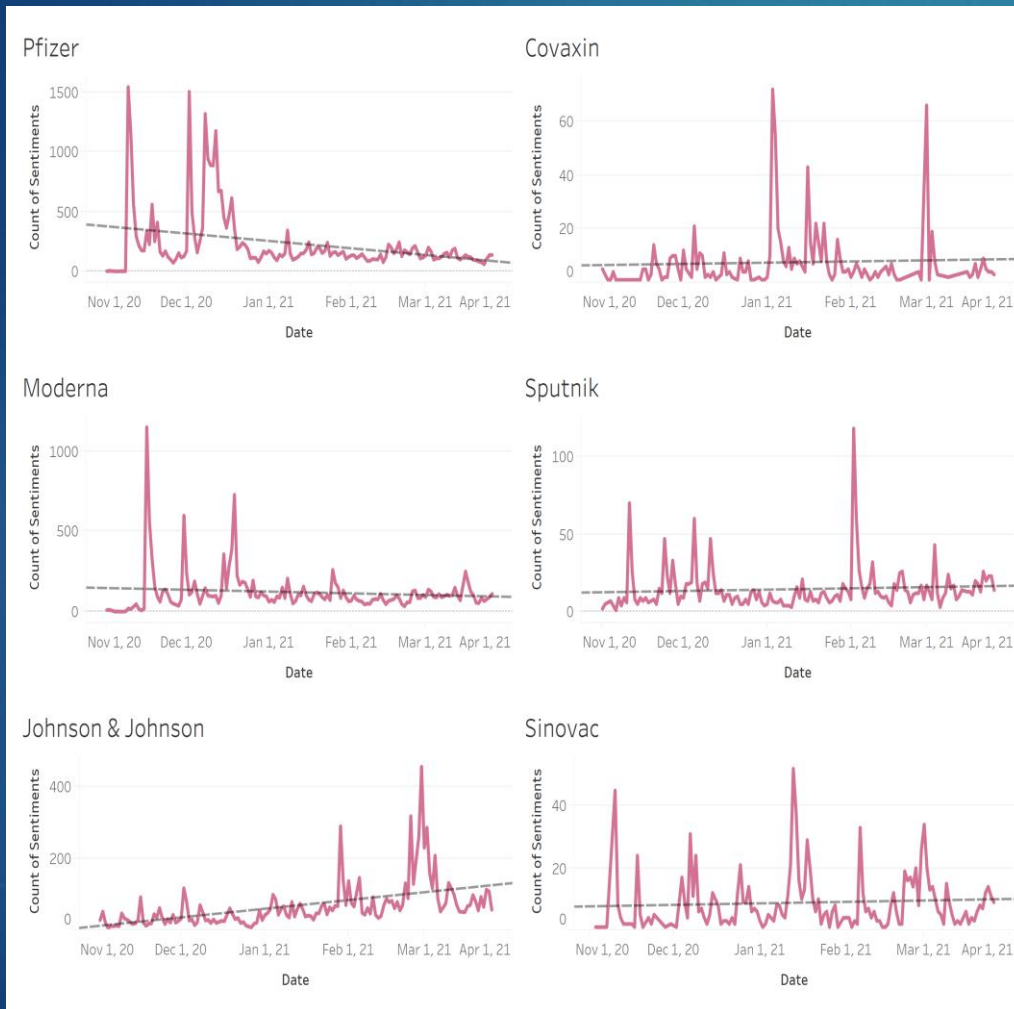
Results



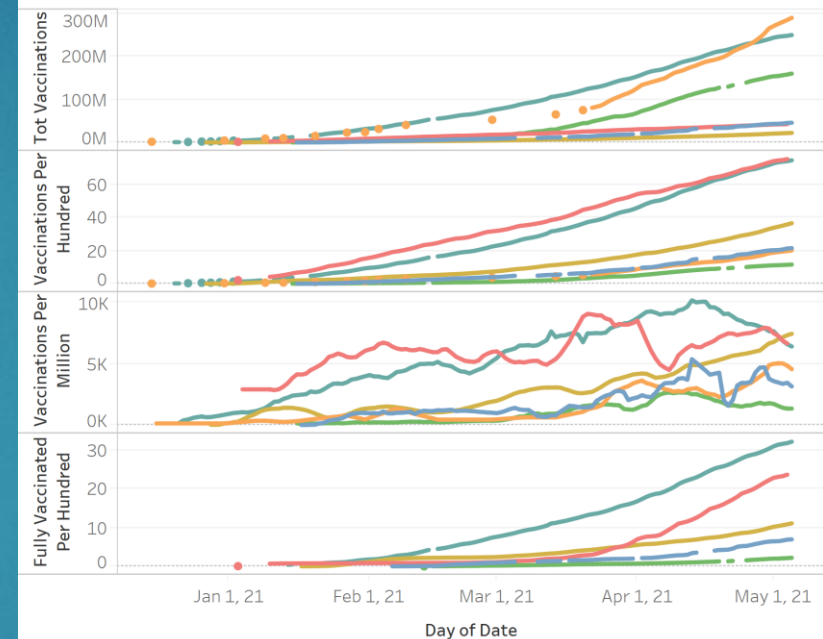
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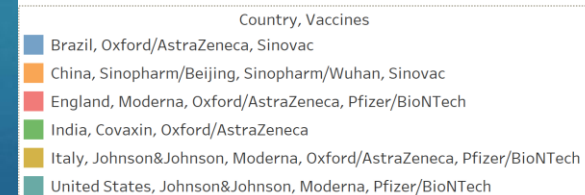
Results



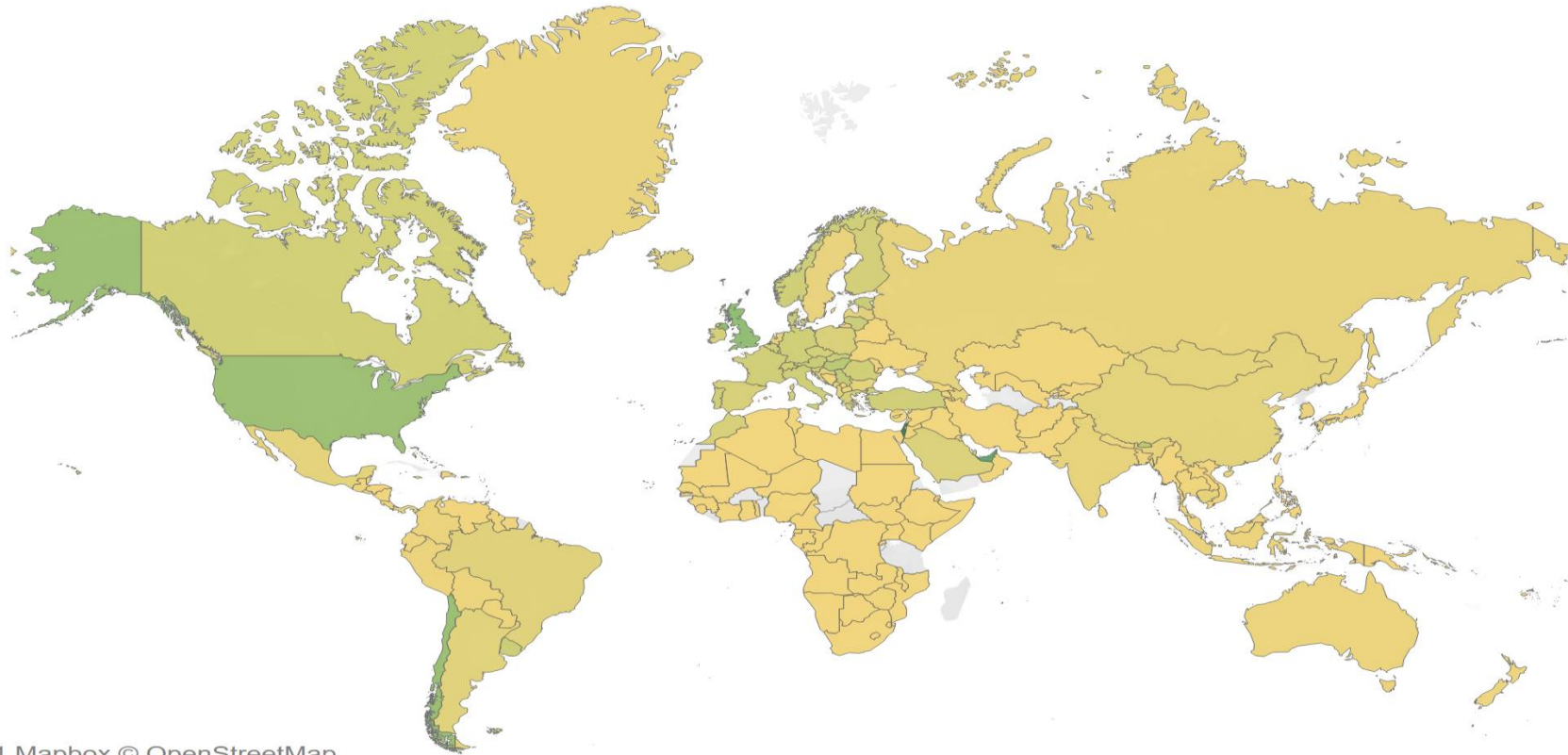
Total Vaccination counts



The trends of sum of Total Vaccinations, sum of Total Vaccinations Per Hundred, sum of Daily Vaccinations Per Million and sum of People Fully Vaccinated Per Hundred for Date Day. Color shows details about Country and Vaccines. The view is filtered on Country, which keeps 6 of 195 members.



Total Vaccinations per Hundred



© 2021 Mapbox © OpenStreetMap

Map based on Longitude (generated) and Latitude (generated). Color shows sum of Total Vaccinations Per Hundred. Details are shown for Country. The view is filtered on sum of Total Vaccinations Per Hundred, which includes values greater than or equal to 0.





Thank You!

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