Sentiment Analysis of Covid-19 Tweets

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We created a **Sentiment Analysis Tool** that displays sentiments towards Covid-19 evaluated by our big data NLP approach at national and state level.

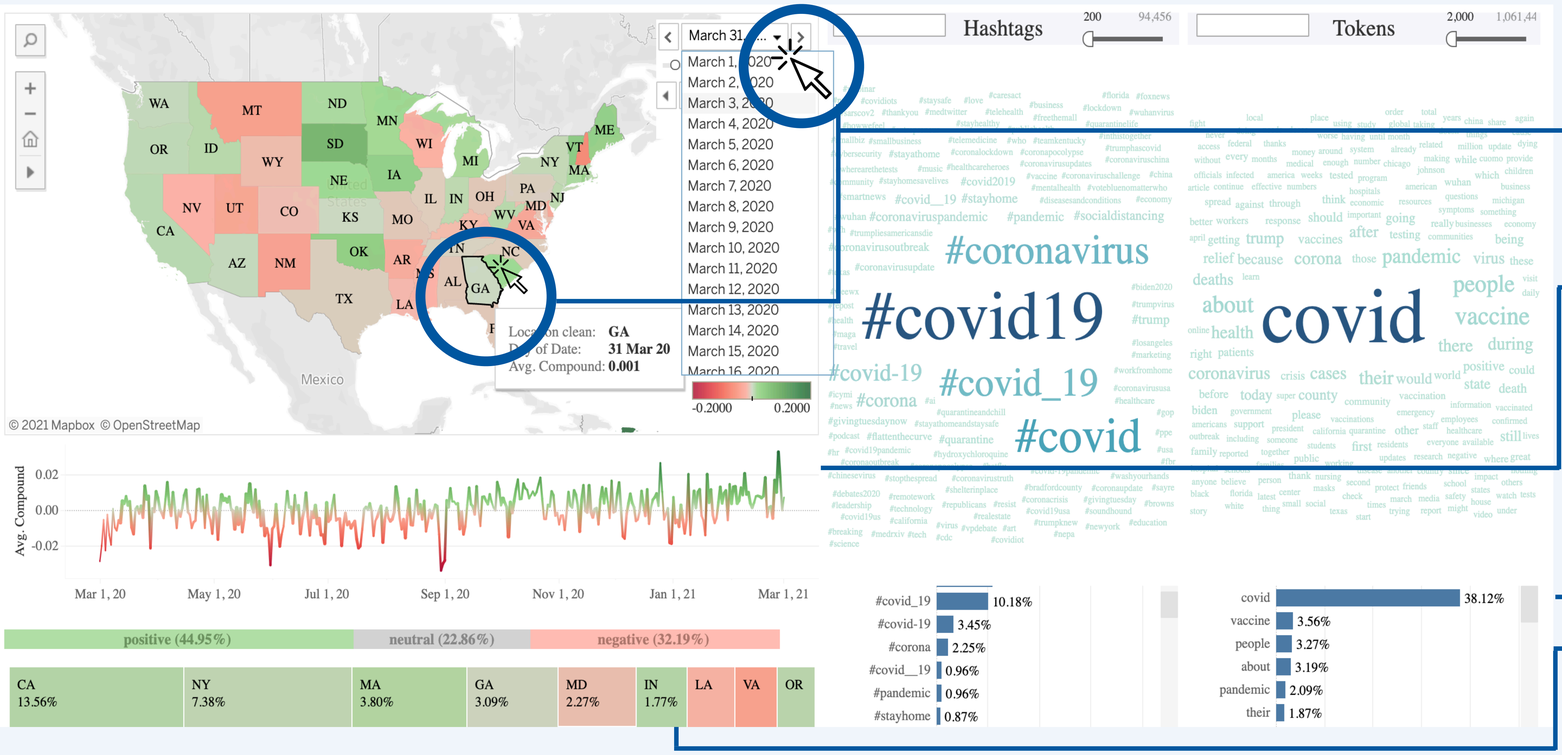
Try it here: https://reurl.cc/529QD6

Fighting Covid with Tweet Sentiment Analysis

1. Controlling Covid-19 depends on individual's reaction to policies.
2. Sentiment analysis on a large scale is key to understanding state-level emotions regarding certain policies.

Sentiment Analysis Algorithm & Visualization

1. We used the Vader (NLP algorithm) model that analyzes ~20GB of Twitter data obtained via downloading/scraping that categorized Tweets into positive, negative and neutral segments.
2. We made an interactive dashboard with a choropleth map that allows users to explore sentiment with time and location inputs. Word clouds and line graphs provide more



1. **Date and State Selections** allow users to view sentiments, hashtags, and popular tokens within a specific date and region.
2. **Line Graph** gives users a view of sentiment trend within the chosen time period.
3. **Hashtags and Tokens Rankings** demonstrates the most used hashtags and tokens arranged in a word cloud for the selected state, showing most trending days
4. **Tree-map** displays the amount of tweets from each state as a percentage.

What's New?

1. We improve the current state of sentiment analysis by performing our analysis on a much larger data set and classifying our data into more dimensions, including emotions, locations, and time.
2. Our enhancements allow us to validate our model accuracy by comparing sentiment levels with key milestone events for which the outcomes of are known.

Evaluation

1. Evaluated results by matching the sentiment changes to major events in 2020 like: Stay Home Order, The US hitting a Record High Number of Confirmed Daily Cases, Execution of Covid Vaccinations in the US etc.
2. Our results matched expected sentiment change for these events.
3. Our model does analysis on a deeper granularity than current approaches (on a much bigger dataset)