

Detecting Anti-Asian Sentiments on Twitter during COVID-19

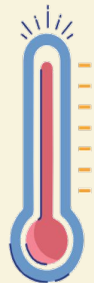


Group 8:

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Introduction

- Along with the spread of the virus, there has been a **sharp increase in hate crimes and discriminatory acts against Asian Americans** in the United States.
- **Social media too witnessed the spread of racism and hateful behavior** towards Asian communities



- *What are the most frequently used words and phrases in tweets related to anti-Asian hate during the COVID-19 crisis?*
- *How has the intensity of anti-Asian hate changed over time?*
- *What are the dominant sentiments and emotions expressed in tweets related to anti-Asian hate?*

Methodology



Dataset ([Source from kaggle](#)): tweets from April-June 2020, August-October 2020 and April-June 2021

01

Text mining & Sentiment Analysis

- affinn dictionary used for general sentiment analysis
- nrc dictionary used to analyze emotions

02

Time Series Analysis

- Results aggregated by month
- Extrapolated missing data in visualizations

03

Visualizations

- ggplot, using WSJ theme
- Word clouds (term frequency and sentiment comparisons)

Findings provided insights into the content and sentiment of tweets related to anti-Asian hate and counterspeech and contributed to our understanding of the issue

Example of hateful tweet detected by sentiment analysis



RPP

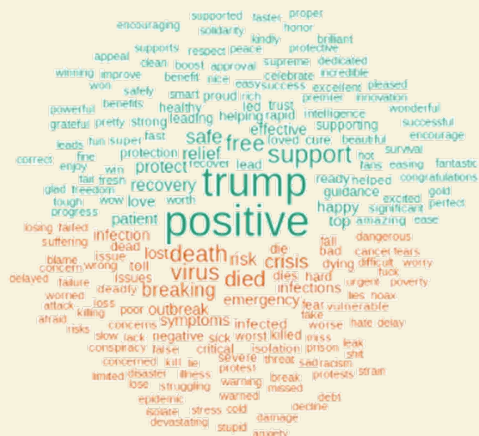
@IND_Bharat45

#WuhanLab #Coronavirus #ChinaGlobalThreat #chinesevirus China a country which is cancer to the world. It must be treated soon for the world will be infected again and again. #WuhanLabLeak 🙏🙏

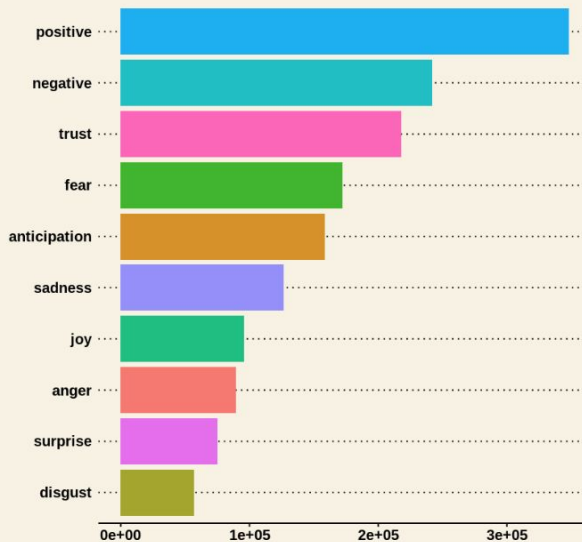
1:39 PM · Jun 24, 2021

Sentiment Analysis

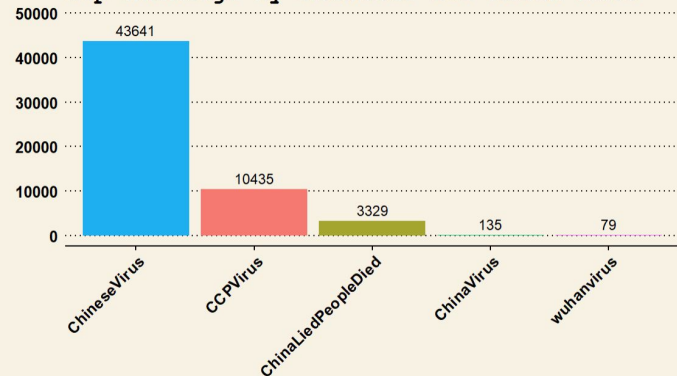
positive



Emotions in Tweets



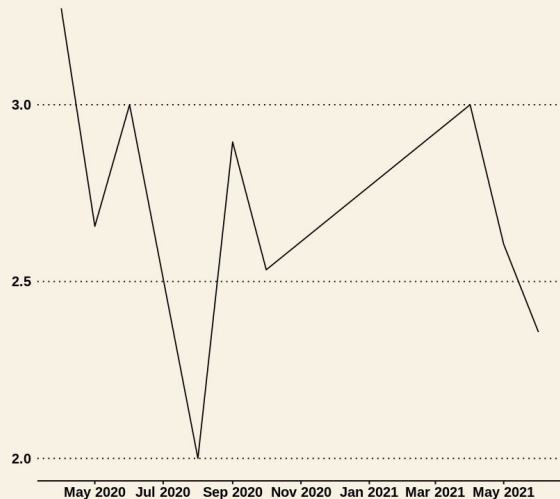
Top Hashtags by Retweets for Asian Hate



negative

Time Series Analysis

Hate intensity by month



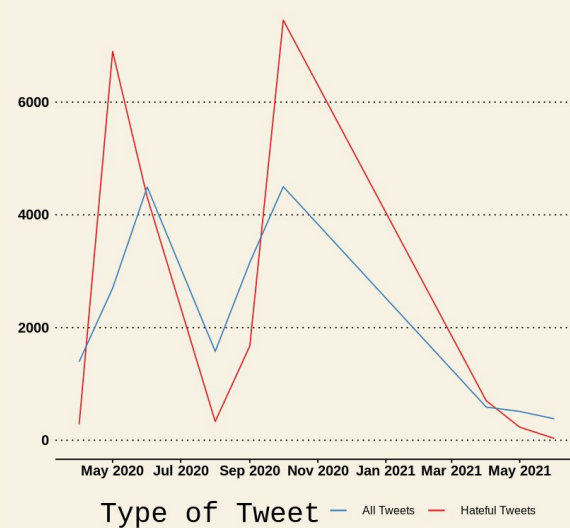
Hate intensity as measured by average sentiment score of tweets with hateful terms or hashtags

Proportion of Hateful COVID-related Tweets per Month



Spike potentially attributable to a difference in data collection methodology

Average retweets of hateful tweets



It seems that hateful tweets are sometimes more susceptible to being retweeted.

Conclusions



Asian hate intensity

- Peaked during the first and second wave of COVID
- Dropped significantly after March 2021



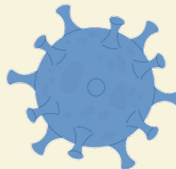
Top three hashtags

- ChineseVirus
- CCPVirus
- ChinaLiedPeopleDied



Most frequent words

- **Positive:** “support”, “guidance”, “recovery”
- **Negative:** “death”, “virus”, “breaking”, “crisis”



Top 4 emotions

- Positive
- Negative
- Trust
- Fear

Thank you !