Detecting persuasion in social media

Ronnakorn Rattanakornphan

Problem area

tldr: detecting possible persuasion in social media

- In modern information world, people can **quickly** discuss their opinion
  - Oftentimes, messages compel or convince people for something
- However, messages can be
  - Misleading
  - Misinformation
  - Propaganda

Examples

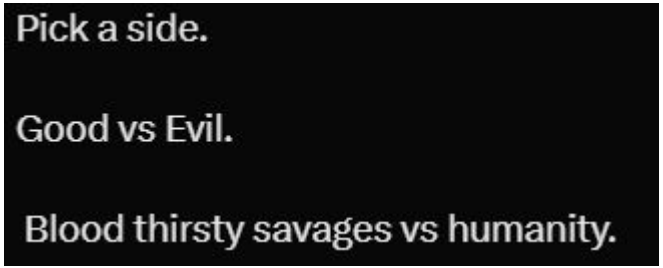
Pineapple, when judiciously applied, makes for a fantastic pizza topping

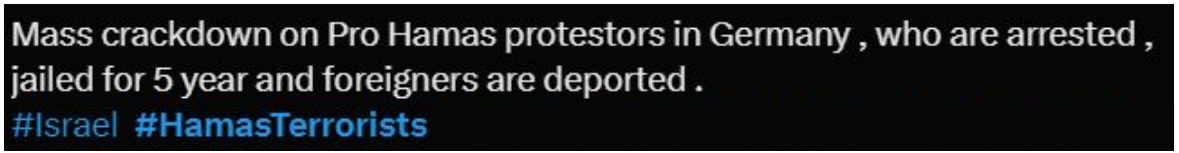
· Aug 2021 · Twitter for Android

Read this detailed study on Masks:"The data suggest that facemasks are ineffective to block transmission of viral&infectious disease such as COVID-19. Wearing facemasks has been demonstrated to have substantial adverse physiological& psychological effects"

Apr 2021

191 Retweets **622** Likes





Credits:
https://qph.cf2.quoracdn.net/main-qimg-6432efa5771d86788ad4a682a182ac0b-lq

Credits:
https://www.boomlive.in/fact-file/prashant-bhushan-tweets-misleading-anti-mask-study-twitter-deletes-it-12717

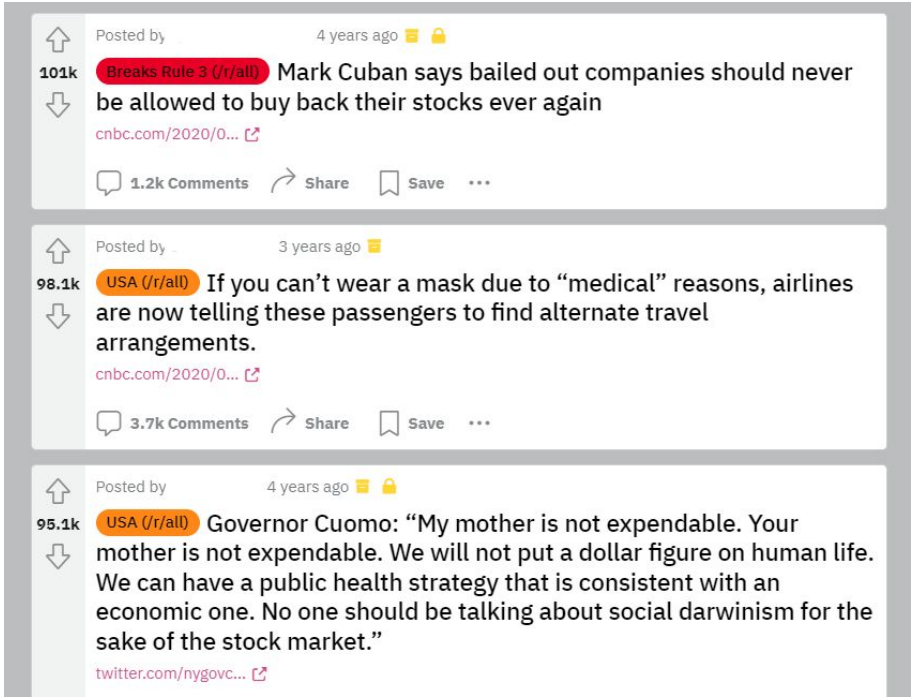
Credits:
https://twitter.com/search?q=%23HamasTerrorists&src=typeahead_click

Possible application

- News filtering
- Incitement alert
- Detecting population opinion manipulation
  - ex. In elections
- Detecting propaganda
- “Armed” people with more information

Data

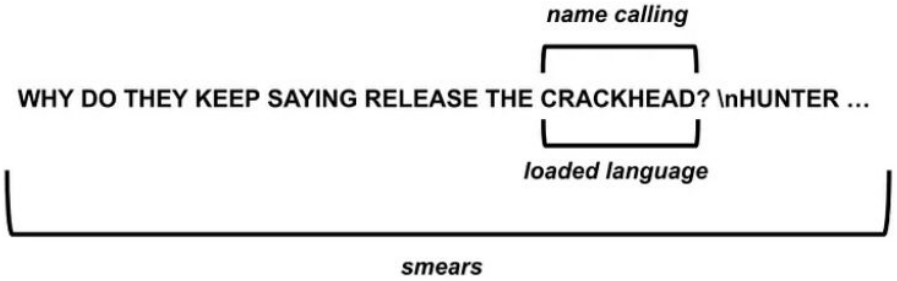
- **Reddit posts**
  - Scrape using selenium
  - From multiple subreddit :
    - r/worldnews/, r/politics/,
  - collect:
    - post title,
    - (optional) post content
    - (optional) top 3 comments
- **Ukraine Twitter data**



rattar@rpi.edu

Method

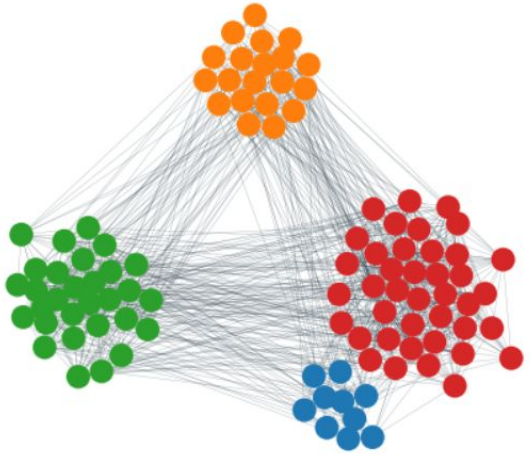
1. Sentiment Analysis
    a. Python's NLTK, Huggingface's transformer
2. Persuasion detection
    a. Python's spaCy
3. Find mini clustering on each persuasion type
    a. Correlation networks on words
    b. Overall sentiment
    c. Word distribution -> common words
    d. Word length



Credits: https://cees-roele.medium.com/detecting-persuasion-with-spacy-6b6beba51076

Possible complication

- Large number of rows
  - Long computation time
- Losing non-text data
  - Images (ex. meme)
  - Links
- Small labeled training data (for persuasion detection)
- Visualization
  - Large dimension



Credits: https://python-graph-gallery.com/500-network-chart-with-edge-bundling/

Possible outcome

- Able to apply the persuasion detection which trained in small dataset on a larger dataset
- Able to make a meaningful cluster from the detection result
- Able pick up key concept that’s commonly present in persuasion
- Able to make intuitive visualization on fromresult

Reference

SemEval-2021 Task 6: Detection of Persuasion Techniques in Texts and Images

https://arxiv.org/abs/2105.09284

Experiments in Detecting Persuasion Techniques in the News

https://arxiv.org/abs/1911.06815

Forewarning of content and involvement: Consequences for persuasion and resistance to persuasion

https://doi.org/10.1016/0022-1031(92)90044-K

Attitude Importance, Forewarning of Message Content, and Resistance to Persuasion

https://doi.org/10.1207/S15324834BASP2201_3