

PANACEA: An automated misinformation detection system on COVID-19

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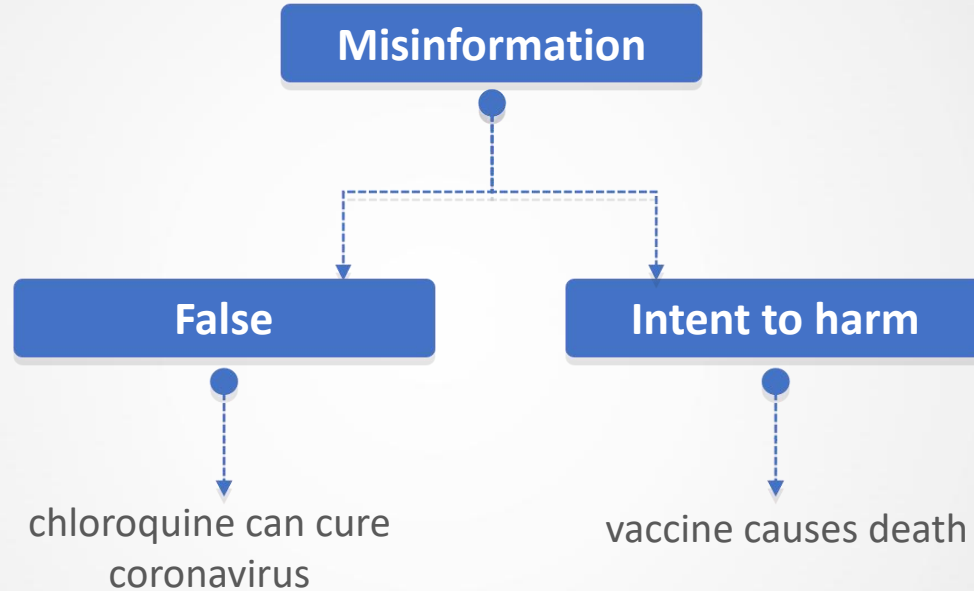
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01

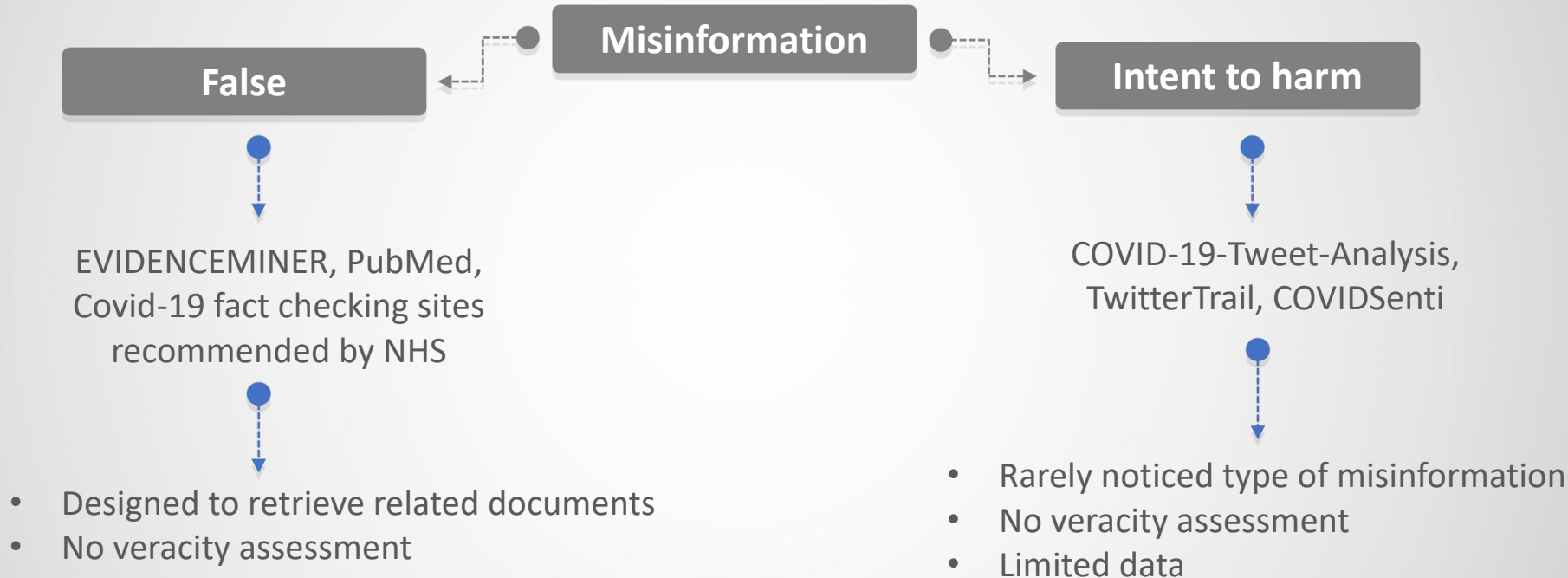
Motivation

MOTIVATION



Those misinformation can strongly influence human behaviour and negatively impact public health interventions, so it is vital to detect misinformation in a timely manner.

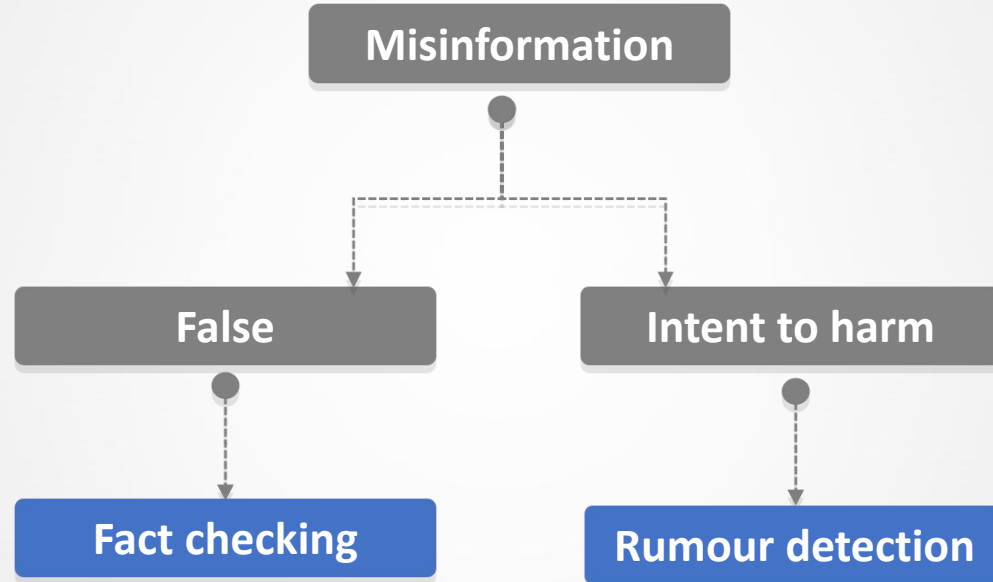
RELATED WORKS



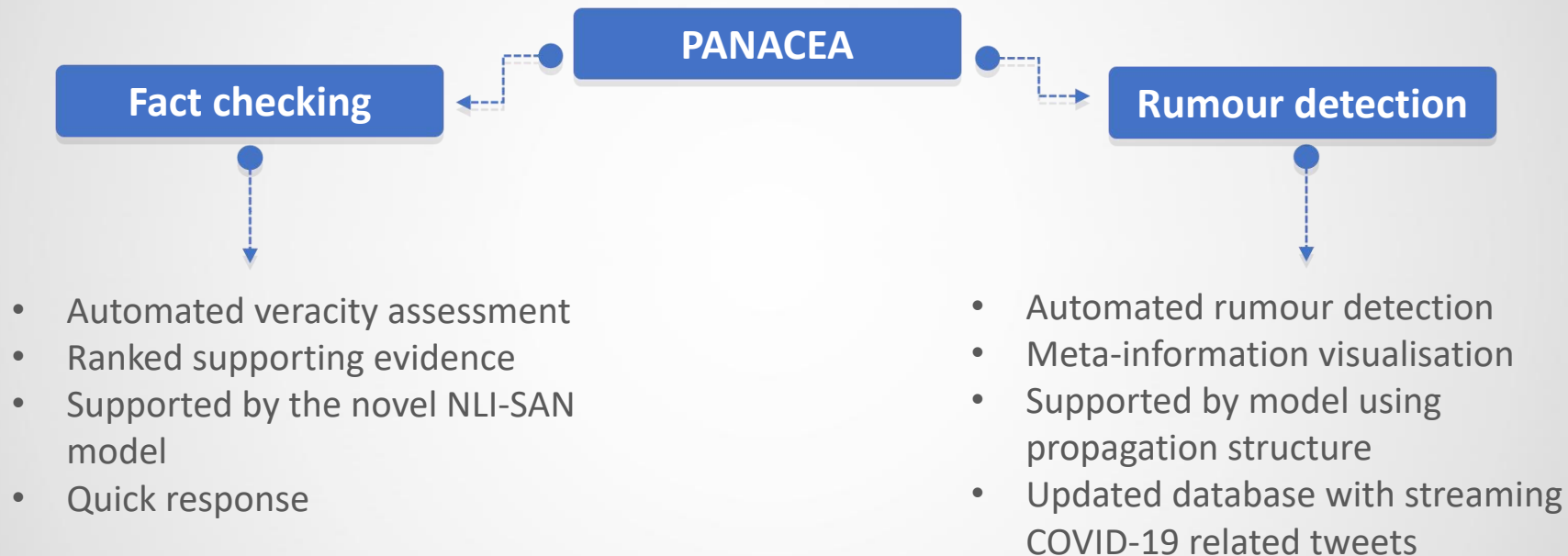
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Contribution

CONTRIBUTION



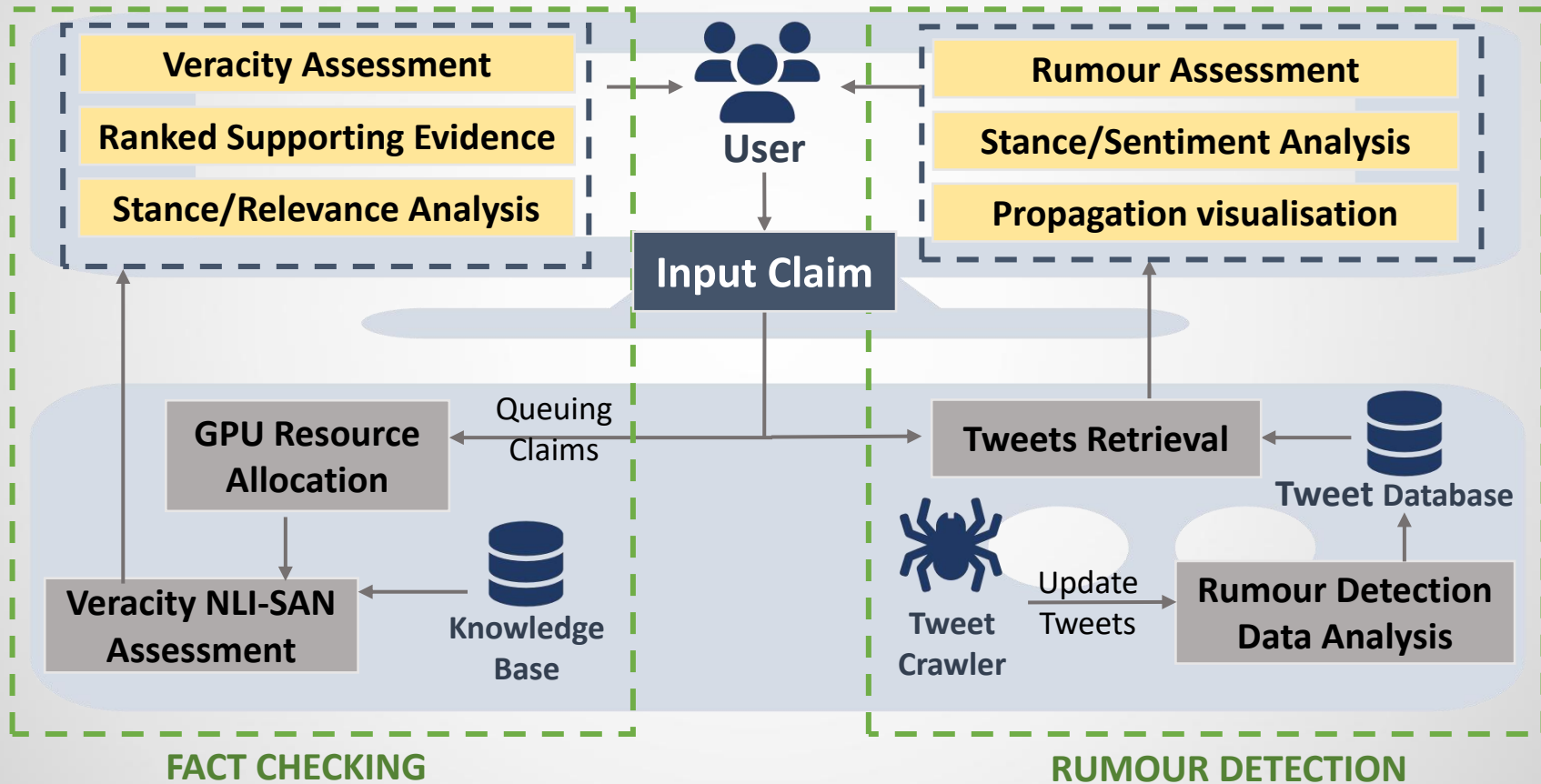
CONTRIBUTION



03

Architecture

SYSTEM STRUCTURE



04

Interface

FACT CHECKING

PANACEA

Input Claim: miracle mineral suppliment (mms) will prevent and cure covid-19.

FALSE

Showing top 10 supporting evidences found

Show Type:
ARTICLE SENTENCE

Sort by:
Relevance
Refute
Neutral
Support

Filter:
Source Filter
All
newsnetwork.mayoclinic.org
neutral.es
healthfeedback.org
maldita.es
newsmeter.in
weband.com
who.int
medicalnewstoday.com
Stance Filter
All
Refute Stance
Neutral Stance
Support Stance

MANAGING LEVELS OF SPECIFIC PROTEIN, MINERAL EARLY IN COVID-19 MAY PREVENT SEVERE ILLNESS - MAYO CLINIC NEWS NETWORK
SOURCE: newsnetwork.mayoclinic.org
RELEVANCE SCORE: 1.00
STANCE: Neutral

EN ALEMANIA, AUSTRIA Y SUIZA NO ESTÁ PERMITIDO COMERCIALIZAR EL DIÓXIDO DE CLORO
SOURCE: neutral.es
RELEVANCE SCORE: 1.00
STANCE: Refute

DOZENS OF CLINICAL TRIALS ONGOING TO INVESTIGATE WHETHER VITAMIN D PREVENTS COVID-19; NO FIRM EVIDENCE YET
SOURCE: healthfeedback.org
RELEVANCE SCORE: 1.00
STANCE: Neutral

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Veracity assessment
novel natural language
inference with a self-
attention network

Switch to see
top sentences

NLI-SAN model

Supporting documents:
Selected and ranked by
BM25 + Monto T5

FACT CHECKING

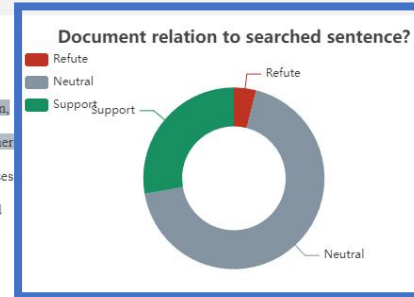
Managing levels of specific protein, mineral early in COVID-19 may prevent severe illness - Mayo Clinic News Network

Full document in newsnetwork.mayoclinic.org/. Share to   

Article related to: miracle mineral supplement (mms) will prevent and cure covid-19.

Document Content:

Managing levels of specific protein, mineral early in COVID-19 may prevent severe illness Joe Dangor Managing levels of specific protein, mineral early in COVID-19 may prevent severe illness May 27, 2020 PHOENIX — Managing levels of calcium in the blood and the protein albumin early on in COVID-19 may prevent patients from progressing to severe illness and death, a study by Mayo Clinic researchers published in the journal *Gastroenterology* found. The findings are based on the remarkably similar clinical features and autopsy results of patients who died of COVID-19 and patients whose organ failure resulted from the release of unsaturated fatty acid caused by other illnesses, says lead researcher Vijay Singh, MBBS, a gastroenterologist at Mayo Clinic in Arizona. The receptor for the COVID-19 virus has been reported on the cells and patients with similar symptoms, leading to the Dr. Singh says. When the liver, serum albumin and albumin are consumed by unsaturated fatty acids generated from the fat breakdown process and the remaining unsaturated fatty acids then injure vital organs, which can eventually lead to death," he says. Supplementing serum calcium and albumin to maintain normal levels starting early and continuing throughout a COVID-19 infection may help bind and neutralize unsaturated fatty acids and prevent organ failure while giving the patient time to fight and clear the infection, Dr. Singh says.

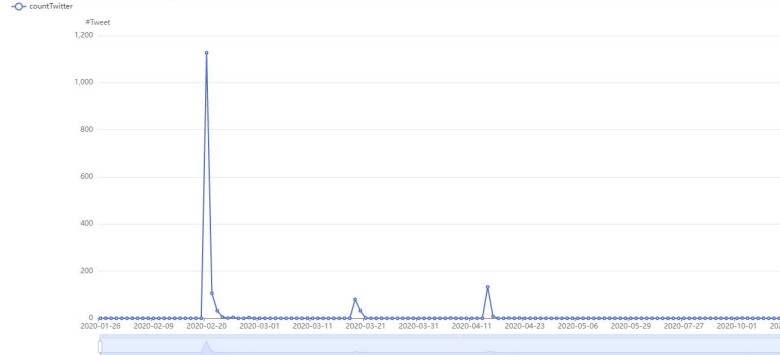


Top 3 relevant sentence
are highlighted

Distribution of stance

RUMOUR DETECTION

Tweet Count - show the total influence and discussion of the input claim.
The total number of tweets related to the input claim against the posting date are shown here.



Tweet count

Word Cloud - show the popular topics of the input claim on both sides.

The top 50 words in tweets refute the input claim and the top 50 words in tweets support the input claim are shown in word cloud. Stopwords, punctuation, numbers are removed to reduce the noninformative words.

Negative

Positive

injection
swear
back
use
trump
itch days
people
effects
drug side
chloroquine
mad
take
even
doctor
took
time
itching
body
taking
piriton
remember
scratch

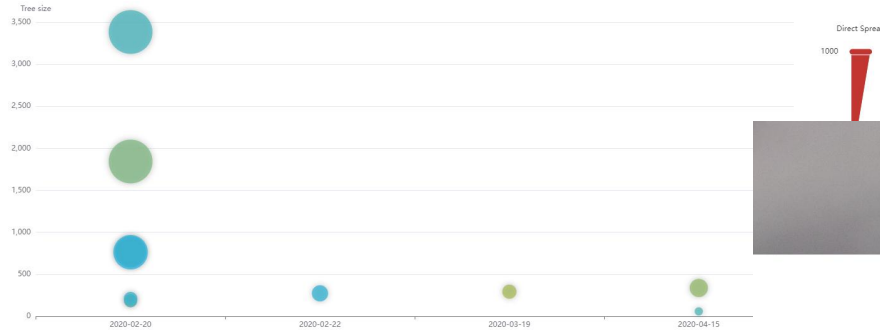
treating
corruption
drugs
good
welcome
true
god
hope
thank
health
well
help
malaria
best
lol
like
cure
sure
world
effective
coronavirus
many
treatment
corona

Word cloud

RUMOUR DETECTION

Source Tweet Influence - show the impact of each original tweet.

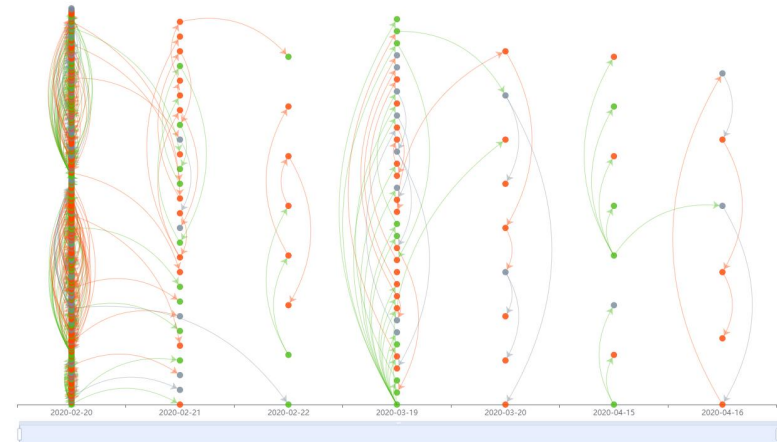
The influence of each original tweet is shown in the scatter, whereas the radius denotes the number of tweets that are directly commented to or retweeted from the original tweet. The y-axis "Tree size" also includes the number of indirect comments/retweets of the original tweet, such as the retweets of retweets, etc.



Source tweet influence

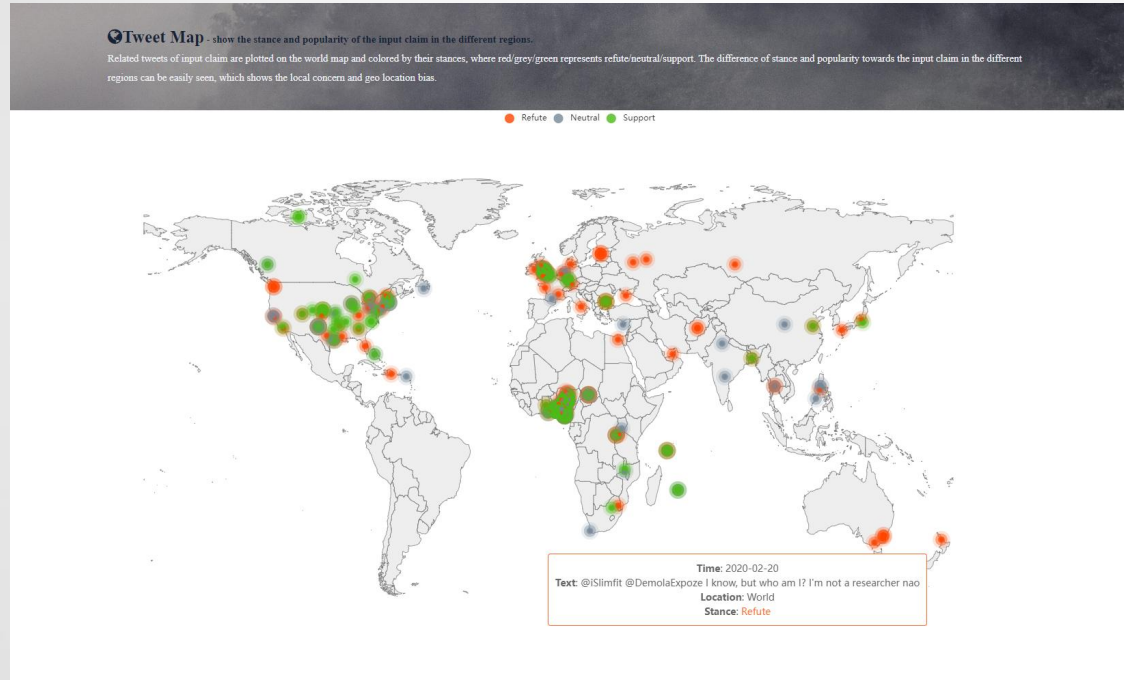
Propagation Graph - show the difference in propagation pattern between rumour and non-rumour tweets.

The propagation graph between the source tweet and its comments/retweets, showing the information spread path.



Propagation graph

RUMOUR DETECTION



→ Tweet map

QUESTIONS?

Demo: <https://panacea2020.github.io/workshop.html>