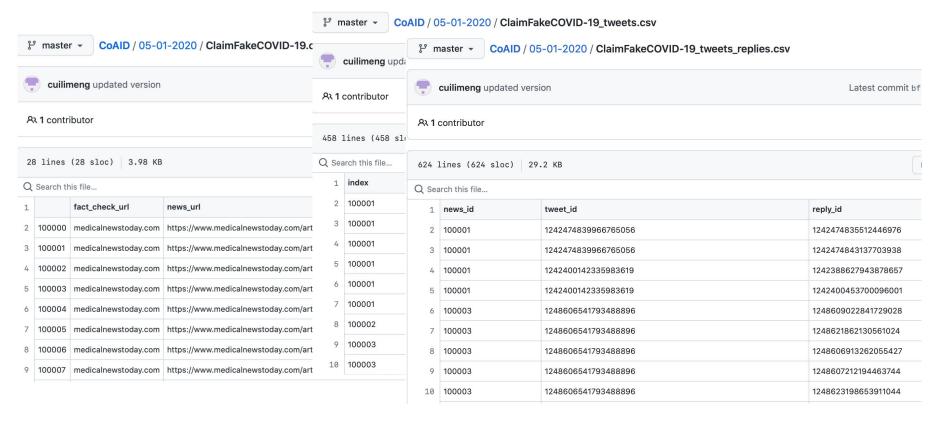
# Identifying Real/Fake COVID-19 Health Information

#### CoAID Dataset - Claims



## Claims Topics

CorEx topic modeling was used to detect recurrent themes in the claims data, and the top words within each topic can help to characterize the topics

Topic #1: related to ventilation

Topic #10: related to whether or not garlic might treat/prevent COVID-19

Topic #15: related to the need to wash purchased produce to eliminate potential COVID-19 remnants

Topic #16: related to pregnant women and their COVID-19 risk

eral

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Topic #1: address ventilation, address ventilation context, ventilation context, food grocery delivery, food grocery
delivery safe
Topic #2: good household disinfectant, household disinfectant surface, good household disinfectant surface, good household
ehold, disinfectant surface
Topic #3: develop severe, risk develop, risk develop severe, severe symptom, concerned spread
Topic #4: safely time, grocery shop safely time, shop safely, shop safely time, grocery shop safely
Topic #5: chloroquine context response, use chloroquine, chloroquine context, use chloroquine context, use chloroquin
e context response
Topic #6: right duty, medical mask, old people, surface food packaging, food packaging
Topic #7: preventive therapy maintain, preventive therapy, therapy maintain, recommend preventive, recommend preventi
ve therapy maintain
Topic #8: incubation period, mask general public, general public, mask general, long incubation period
Topic #9: affect country, malaria affect country, malaria affect, country report case, country report
Topic #10: help prevent, eat garlic, eat garlic help, eat garlic help prevent, garlic help
Topic #11: transportation school, people room, room previous, risk transportation school, people room previous
Topic #12: prevent treat, treat new, prevent treat new, vaccine drug treatment, drug treatment
Topic #13: alcohol protect, alcohol protect dangerous, drink alcohol protect dangerous, drink alcohol protect, drink
alcohol
Topic #14: dose use recovery, recovery trial, use recovery, use recovery trial, dose use recovery trial
Topic #15: fruit vegetable time, vegetable time, wash fruit vegetable time, wash fruit, wash fruit vegetable
Topic #16: pregnant woman, pregnant woman test, woman test, pregnant woman high, pregnant woman high risk
Topic #17: coin banknote, spread coin, spread coin banknote, child transmission, role child
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Topic #18: thermal scanner, scanner detect, thermal scanner detect, scanner diagnose, thermal scanner diagnose
Topic #19: mineral supplement cure, supplement cure, vitamin mineral supplement cure, mineral supplement, vitamin min

Topic #20: pneumonia protect, vaccine pneumonia, vaccine pneumonia protect

to household cleaning and disinfection

Topic #2: related

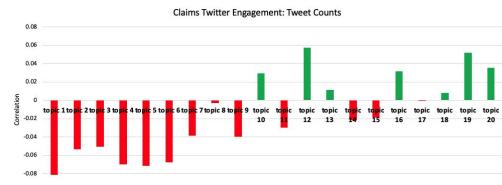
Topic #5: related to the use of chloroquine to treat COVID-19

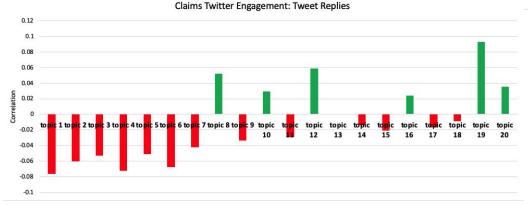
Topic #19: related to vitamin/mineral supplements to treat/prevent COVID-19

Topic #20: related to the pneumonia vaccine and its potential impact against covid

# Claims Topics and Twitter Engagement

Correlating claims' Twitter engagement through tweets and replies with the claims' probabilities of being associated with the topics can help to understand which topics may drive more engagement





- In general, the patterns in tweet counts and replies for claims behave similarly
- The more likely that topics 1 through 7 are mentioned in a claim, the less likely the claim will earn high engagement
- Claims that feature topic 19, which discusses
   vitamin and mineral supplements to
   treat/prevent COVID-19, earns high engagement

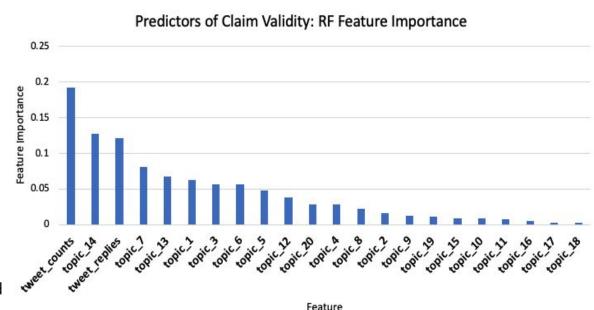
### Topics and Engagement as Indicators of Claim Validity

The topics in the claims found by CorEx can be used along with Twitter engagement to predict claim validity with reasonable model performance:

Accuracy: 0.9358974358974359

AUC: 0.6706081081081081

According to the topic explanations on the previous slide, in addition to the tweet and reply counts that a claim receives, claims that mention **recovery drug trials**, **preventative therapies**, and **alcohol** are most dominant in determining claim validity



#### Conclusion

- Some of the most prevalent themes within claims discuss preventative measures against
   COVID-19, and the topics in claims can be used along with Twitter engagement to predict claim validity
- Keywords and sources are big indicators of realness and fakeness of news articles
- Future steps:
  - Experiment with more keyword and source combinations, and more models
  - Tune and optimize models
  - Train and test on more diverse and comprehensive dataset to improve the generalizability of models
  - Obtain data from Twitter to further analyze sentiment on Twitter

# Thank you!