

Combating Rumor

—COVID-19 Rumor Detection on Twitter

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Problem Statement

The spreading rate of coronavirus disease 2019 (COVID-19) has been very high around the world. The world was in a war to fight not only a pandemic, but also an infodemic.

In this project, I design a rumor detection and truth response system to combating the infodemic.

Capstone Overview

COVID-19 Twitter Analysis

Word Cloud

Showing during the pandemic, from 2020 to 2022, when people mention COVID-19, what are they focusing on?

Rumor Detection

Rumor or not?

- Logistic Regression
- SVM
- CNN+BiLSTM

Matching Truth

Could I find related response in database?

- Pyspark
- Tf-idf
- Jaccard Similarity

Implementation

COVID-19 Twitter Analysis



2020 Word Colod



2021 Word Colod



2022 Word Colod

- 2020: China; Wuhan; Breaking; Mask; CDC; Emergency;
- 2021: Lockdown; Vaccine; Home; Relief; Trump & Biden
- 2022: Omicron; School; Case; Vaccine

Rumor Detection

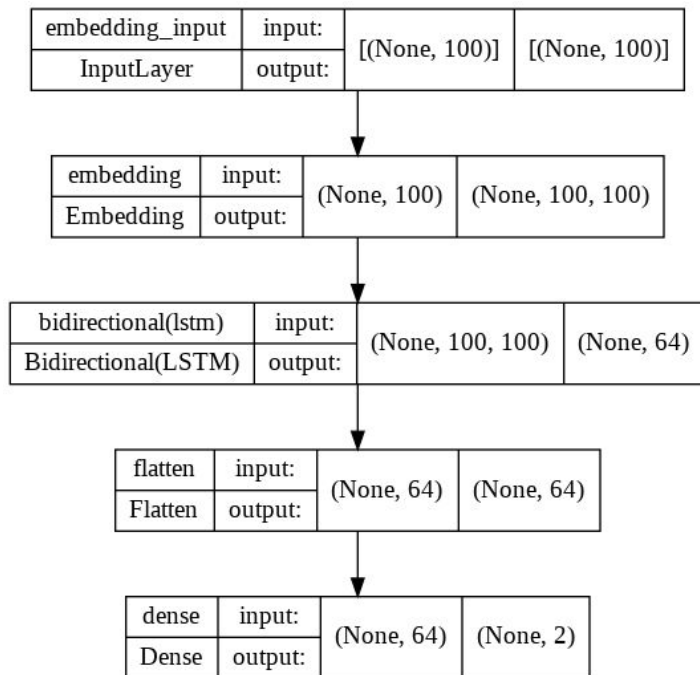
Data Processing:

- Data cleaning
- Lemmatization
- Tf-idf

Modelling:

- LR
- SVM
- CNN+BiLSTM

	Accuracy	Recall	Precision
Logistic Regression	0.934	0.939	0.907
SVM	0.943	0.941	0.922
CNN+BiLSTM	0.906	0.906	0.909



Truth Matching

Dataset:

COVID-19 related question & answer dataset in kaggle

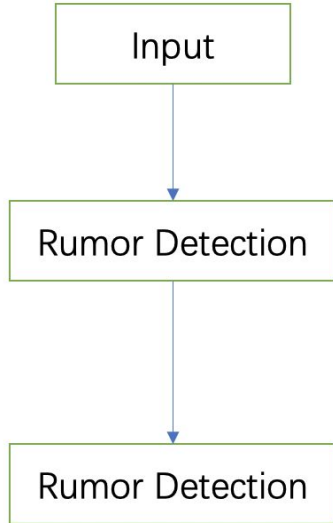
Methods:

- Word embedding
- Jaccard Similarity

Does CDC recommend the use of facemask or face coverings to prevent COVID-19?

In light of data about how COVID-19 spreads, along with evidence of widespread COVID-19 illness in communities across the country, CDC recommends that people wear a cloth face covering to cover their nose and mouth in the community setting. This is an additional public health measure people should take to reduce the spread of COVID-19 in addition to (not instead of) social distancing, frequent hand cleaning and other everyday preventive actions.

Conclusion



WHO has stated there is no possibility that coronavirus is transmitted by aerosols.

Feedback: It's a rumor

Feedback: Matching successful, Do you want to know how does Coronavirus get transmitted?

Covid-19 can be passed from person to person through droplets from coughs and sneezes.



Any Questions?