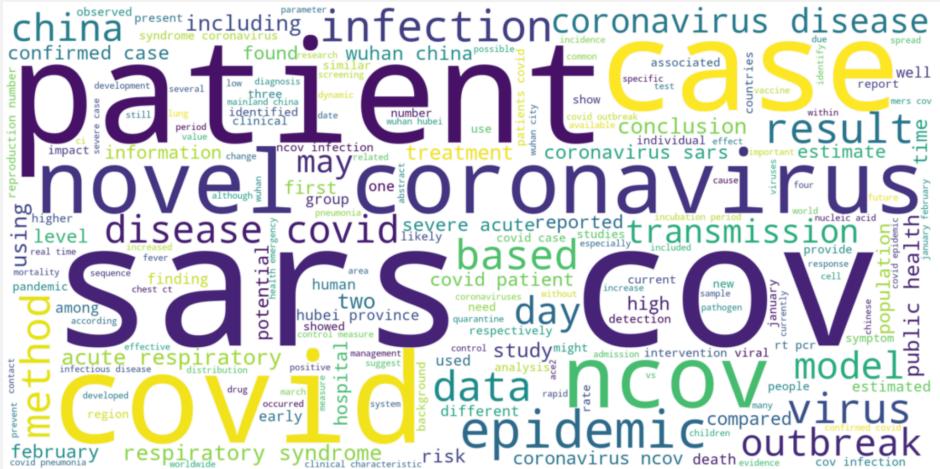


DATA SCIENCE FOR FINAL PROJECT

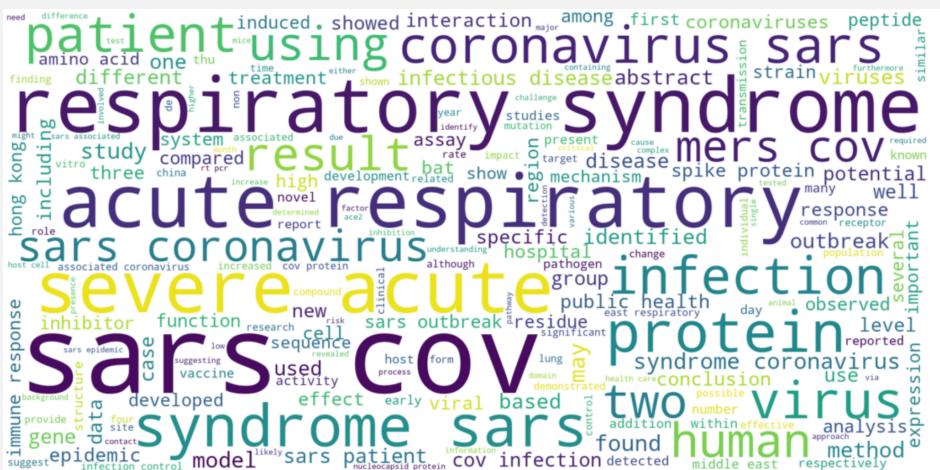
Zhaohui qu 1005783127

EXPLORATORY DATA ANALYSIS

COVID-19

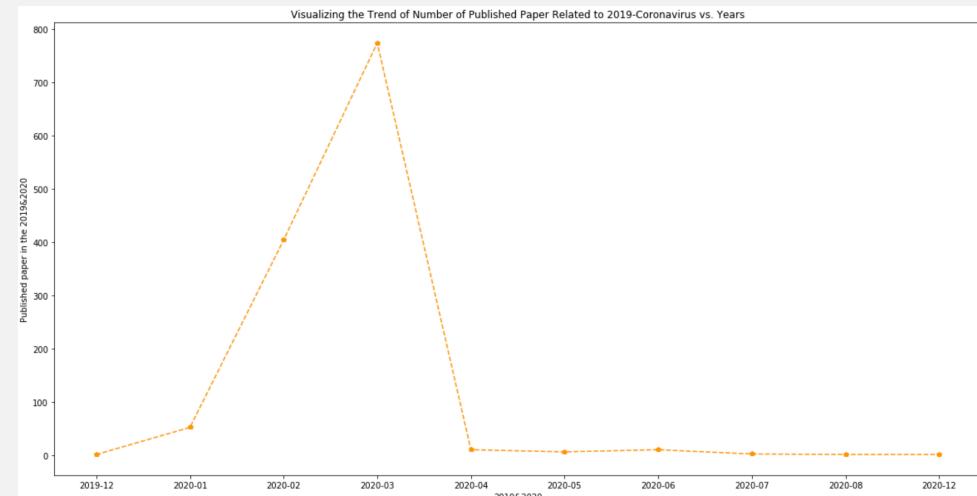


SARS

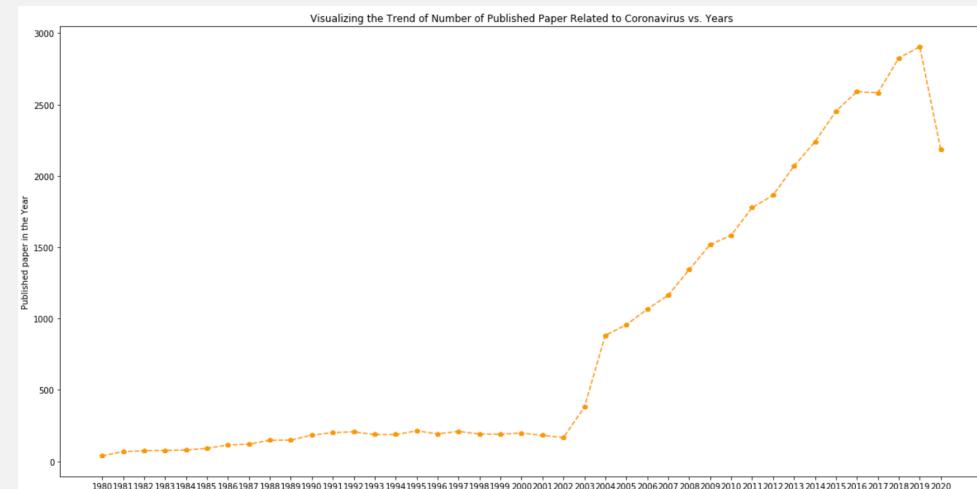


In the abstract, the most commonly used words are similar in both graph, like "sars", "cov", "coronavirus", etc. But in Word cloud of COVID-19, "novel" is an obvious word, which means that COVID-19 is different from previous coronavirus.

Published Paper about COVID-19

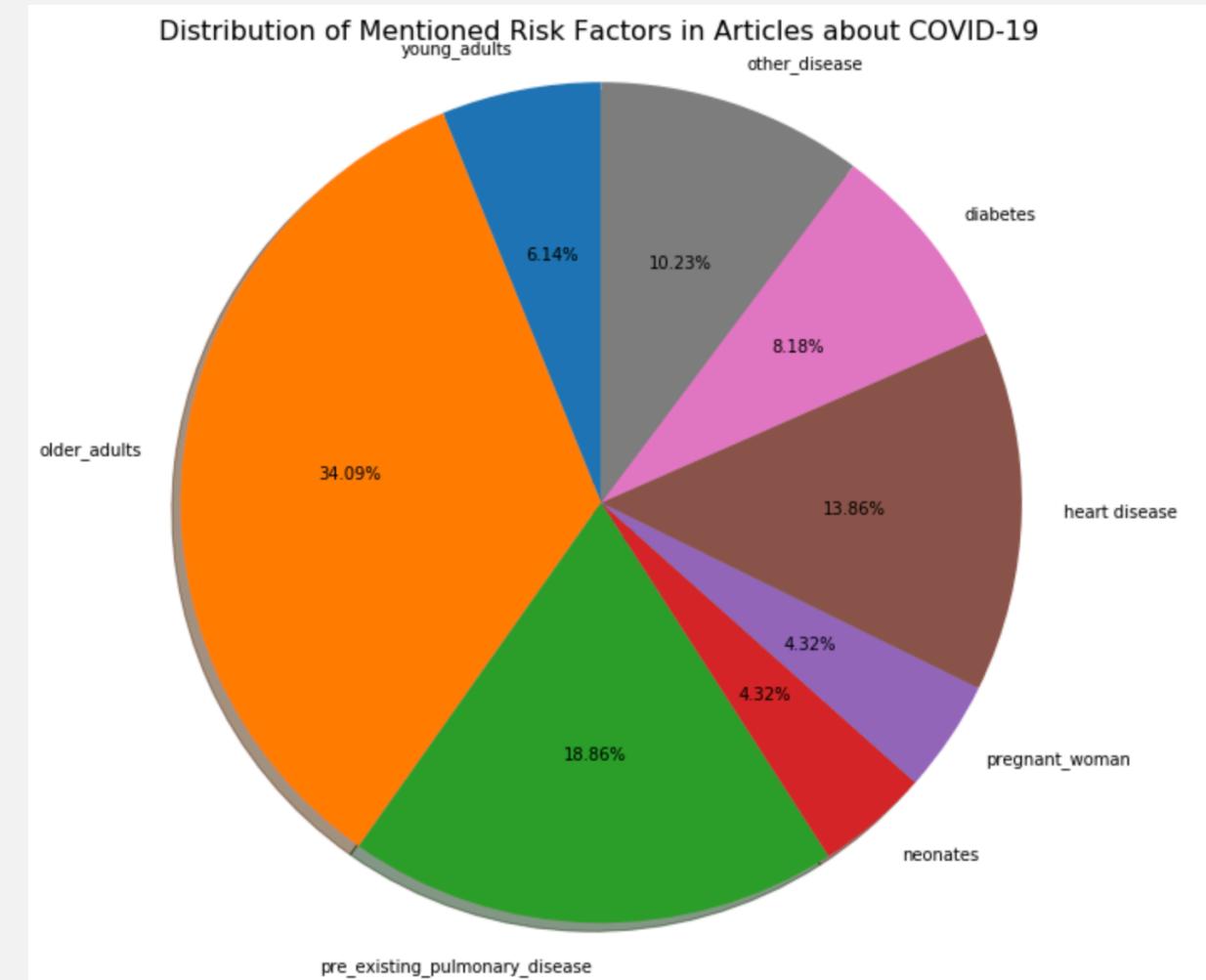
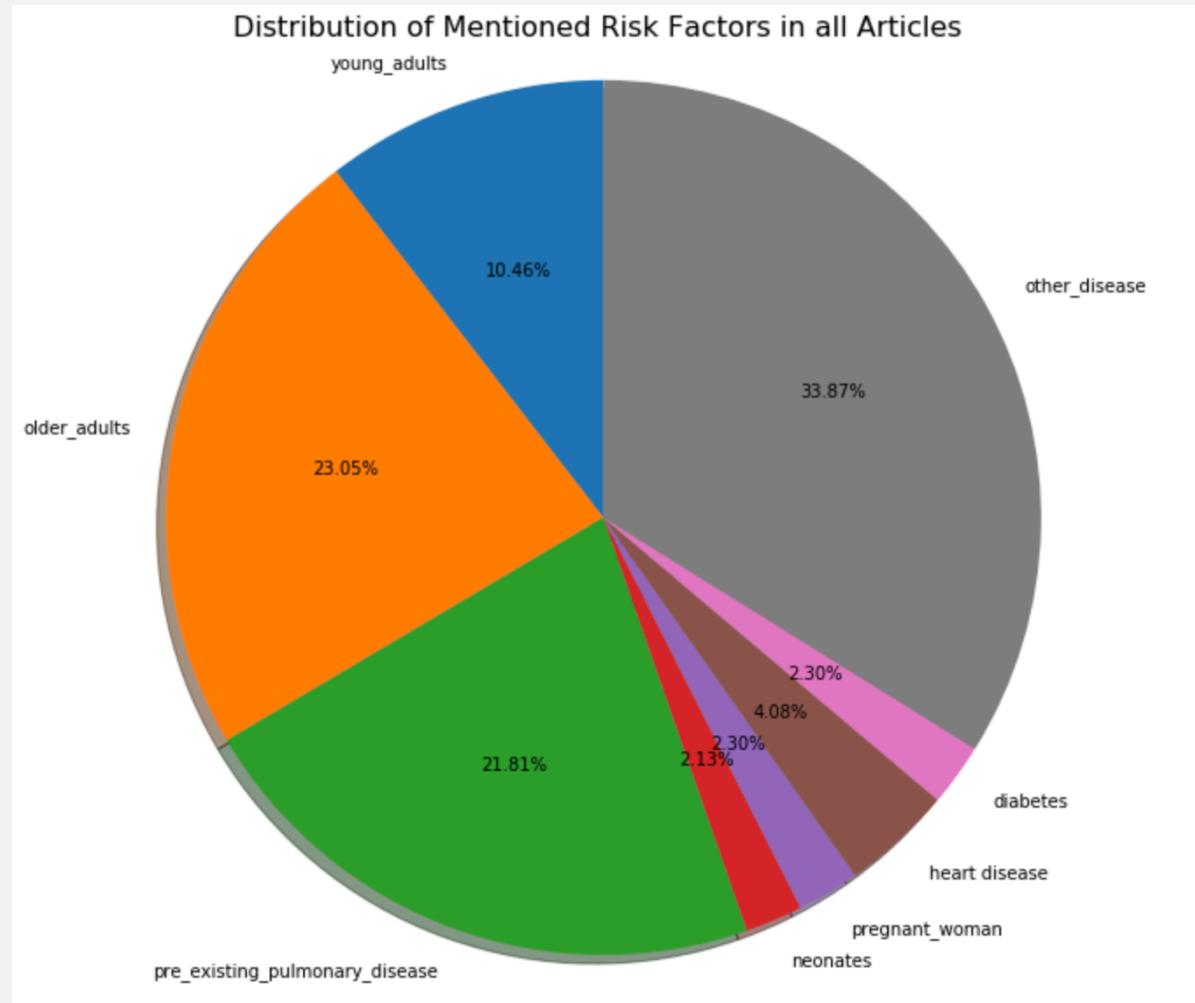


All Published Paper



In 2004, there were about twice as many papers published compared to 2003. One possible reason is that in 2003 there was a large global outbreak of SARS coronavirus which stimulated people's demands in doing more research in the topic of the coronavirus. The number of published papers related with COVID-19 also increased dramatically from 2019.¹² to 2020.³

EXPLORATORY DATA ANALYSIS



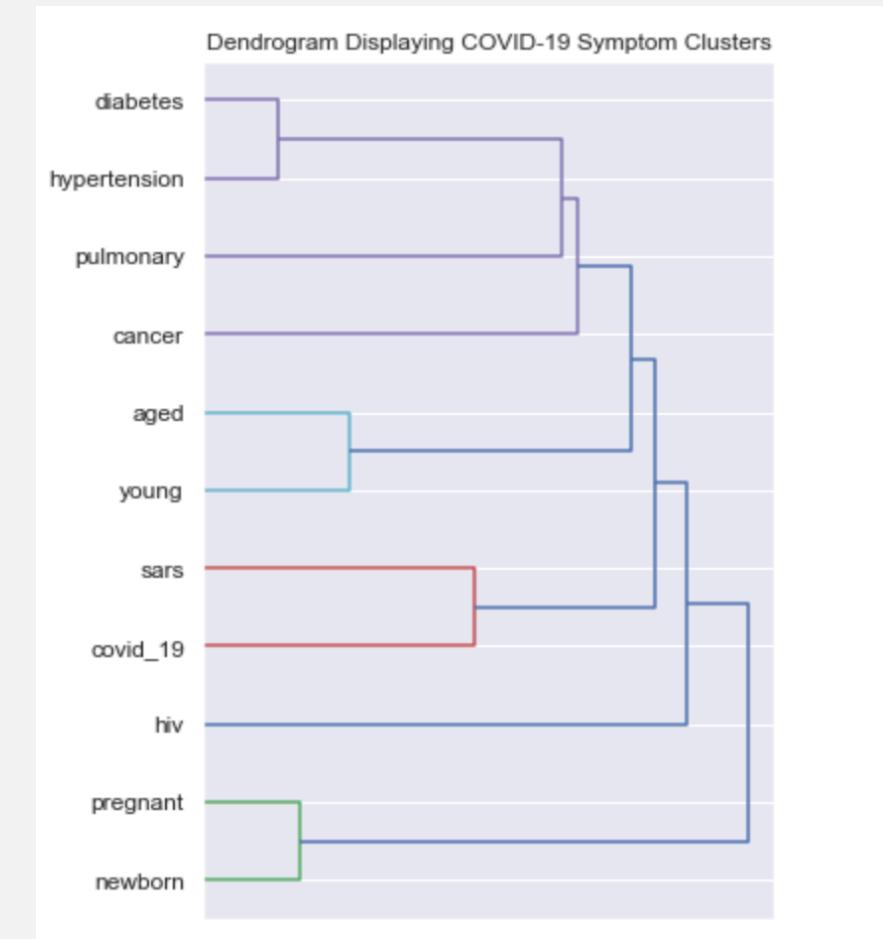
We can see that the most mentioned risk factors about sars is other disease like 'cancer','hiv','marrow','transplantation','aids','corticosteroids','obesity'. But the most mentioned risk factors about COVID-19 is older adults. We can see that older people are more likely to be infected.

MODEL IMPLEMENTATION

Perform unsupervised Machine Learning using K-Means Clustering



Perform unsupervised Machine Learning using Hierarchical Clustering



POLICY AND GUIDANCE

People Who Are at Higher Risk for Severe Illness

Older People

Older adults and people who have severe underlying medical conditions like heart or lung disease or diabetes seem to be at higher risk for developing more serious complications from COVID-19 illness.

People with Pre-existing Pulmonary Disease

People who had pre-existing pulmonary disease, like asthma, are more likely to be infected by COVID-19. And people with moderate to severe asthma may be at higher risk of getting very sick from COVID-19. COVID-19 can affect your respiratory tract (nose, throat, lungs), cause an asthma attack, and possibly lead to pneumonia and acute respiratory disease.

Immunocompromised People

Many conditions can cause a person to be immunocompromised, including cancer treatment, HIV, bone marrow or organ transplantation, immune deficiencies, poorly controlled HIV or AIDS, and prolonged use of corticosteroids and other immune weakening medications.

What should we do?

Steps you can take

If you are at higher risk for serious illness from COVID-19 because of your age or because you have a serious long-term health problem, it is extra important for you to take actions to reduce your risk of getting sick with the disease.

- Stay home if possible.
- Wash your hands often.
- Take everyday precautions to keep space between yourself and others (stay 6 feet away, which is about two arm lengths).
- Keep away from people who are sick.
- Stock up on supplies.
- Clean and disinfect frequently touched surfaces.
- Avoid all cruise travel and non-essential air travel.
- Call your healthcare professional if you have concerns about COVID-19 and your underlying condition or if you are sick.