

Overlooked Voices under Strict Lockdown: Mapping Humanitarian Needs in 2022 Shanghai COVID-19 Outbreak

Presenter:



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UNIVERSITY.



Background

City Level Lockdown was in Effect

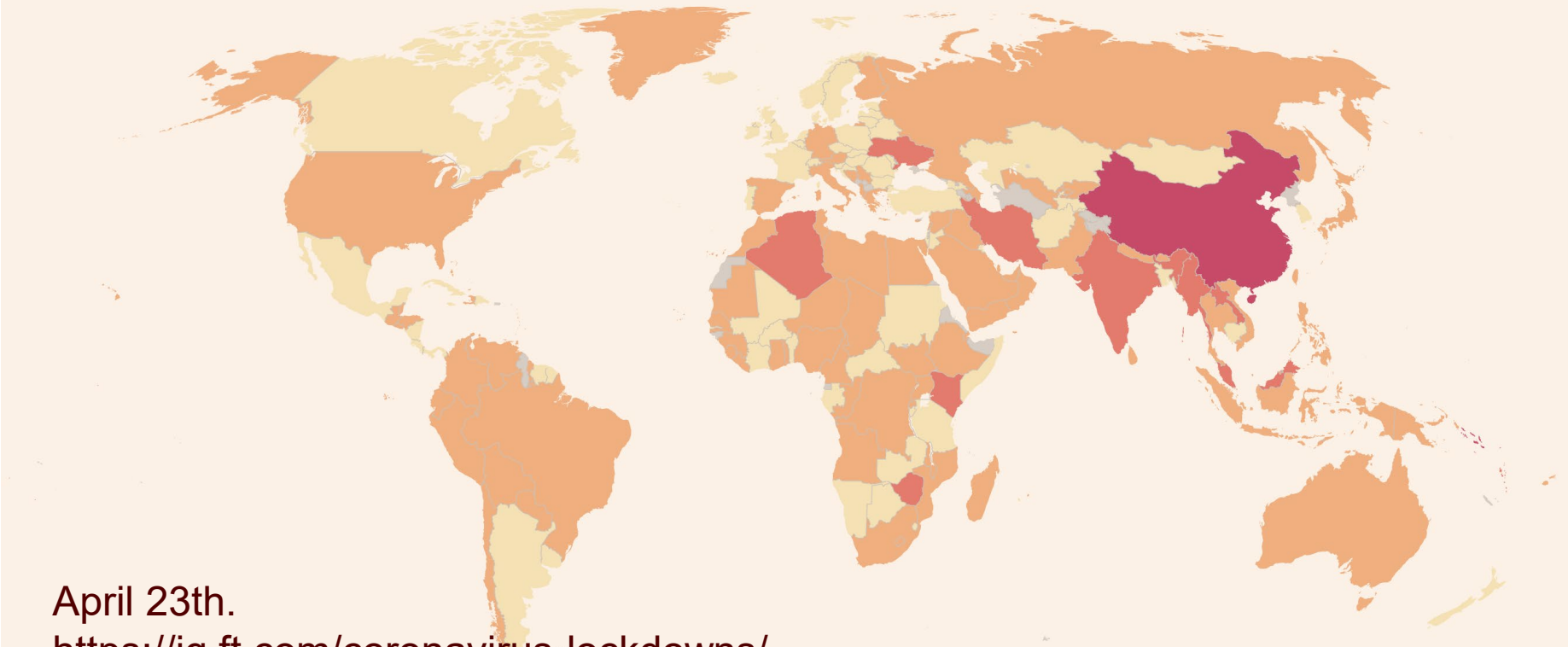
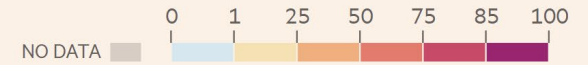
- March 28th Pudong District start to execute strict lockdown.
- April 1st, the whole Shanghai City was under lockdown.





Lockdowns around the world

Oxford Covid-19 government response stringency index



April 23th.

<https://ig.ft.com/coronavirus-lockdowns/>

The background is a solid dark red color. On the left side, there are several stylized virus particles in shades of red and pink, some with spikes and others with circular features. A large, abstract, wavy shape in light yellow and pink extends from the left edge towards the center. In the bottom right corner, there are more virus particles and abstract shapes in the same color palette. The text is centered in the middle of the image.

Is lockdown the optimum solution
for China?



Background



Background



Objectives

Objectives

Whether?

Do people need help under strict lockdown policy?

01



02

When & Where?

What are the spatial and temporal patterns of those help request?

03

What?

What exactly are their urgent needs when requesting help?



Background



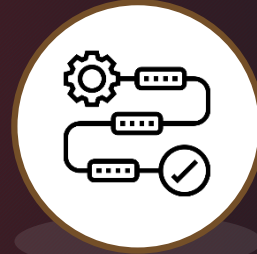
Objectives



Background



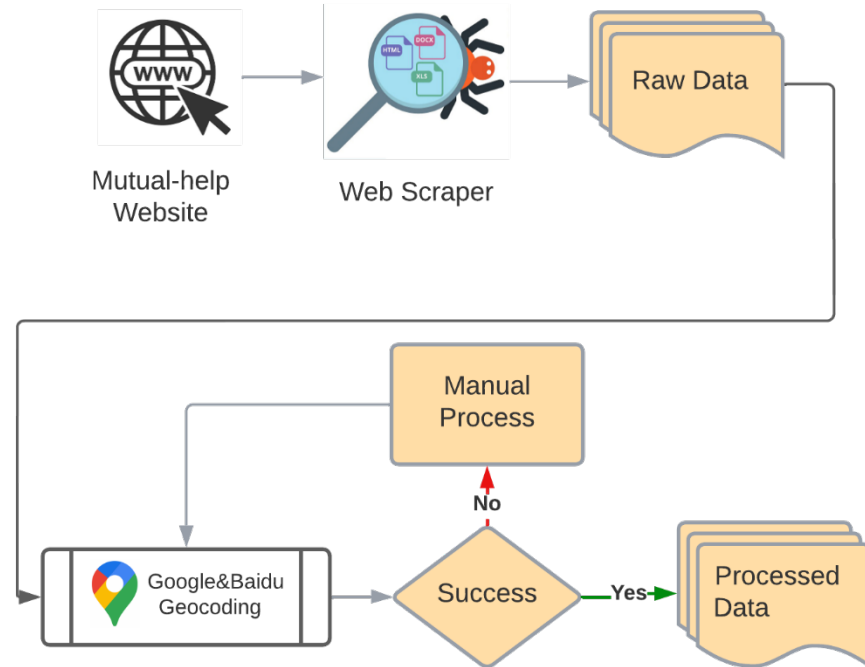
Objectives



Methodology

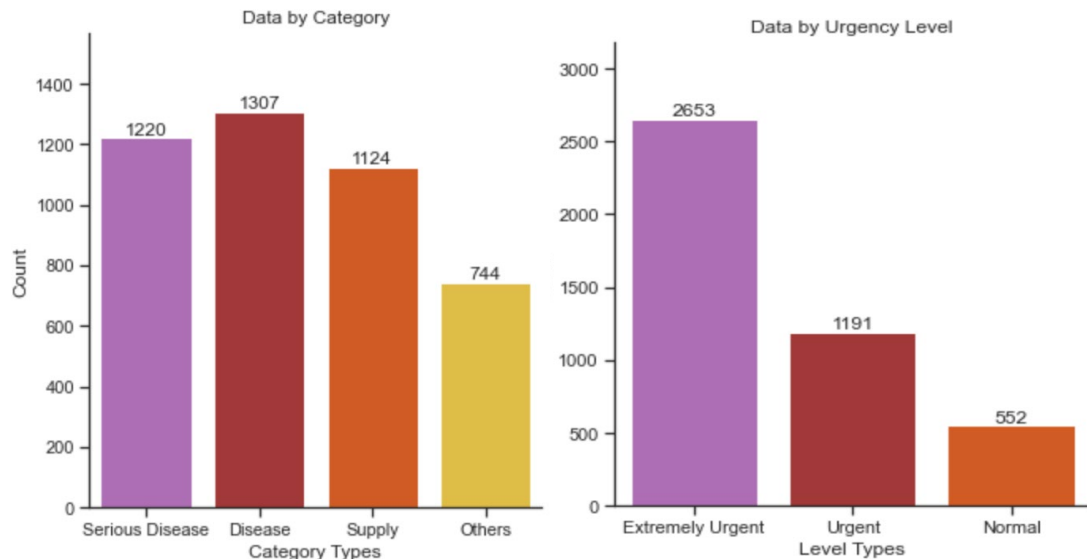


Data Harvesting Pipeline





Help Request Data



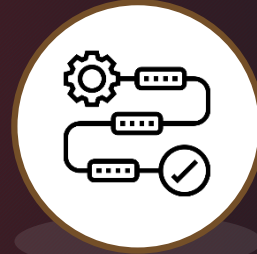
Total Number: 4395



Background



Objectives



Methodology



Background



Objectives



Methodology



Results



Covid-19 Help Messages in Shanghai

Posting Messages

3713

Solved Messages

2066

Following Messages

1604

Remaining Messages

43

The latest data time: 4/24/2022, 10:32 PM



Program updated time: 5/1/2022, 9:04 PM

Detailed Information

ID: 5518

Detailed Messages: 需要一个准确的温度计玻璃的退烧药因为发烧一直反复
具体多少度不知道一直高烧四肢酸痛

Poster: 李来福

Phone Number: 176****0116

Post date: 4/18/2022, 6:26 PM

ID: 5713

Detailed Messages: 急需胰岛素, 家里母亲糖尿病患者, 已经断药了, 急需胰岛素, 急需帮助!!!

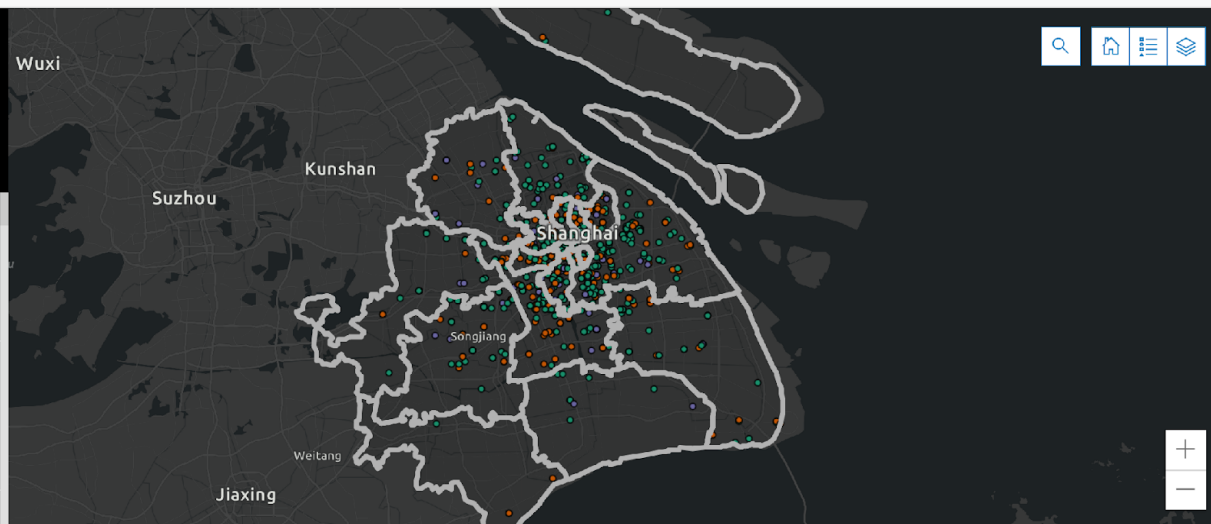
Poster: 谢旭明

Phone Number: 138****0754

Post date: 4/19/2022, 6:44 PM

ID: 5565

Detailed Messages: 需要催乳



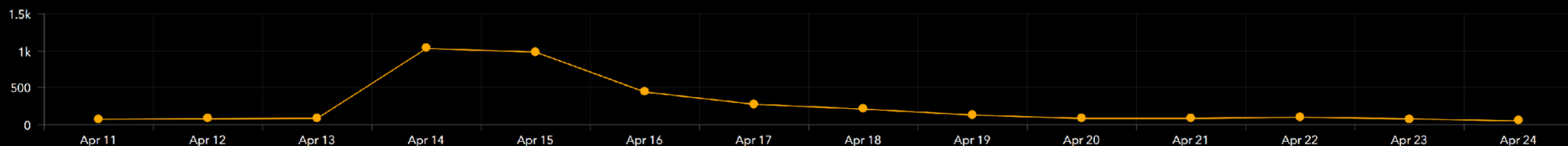
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The Distribution Map of Messages

Statistical Analysis in Fine Scale

The Daily Number of Posting Messages





Covid-19 Help Messages in Shanghai

Posting Messages

3713

Solved Messages

2066

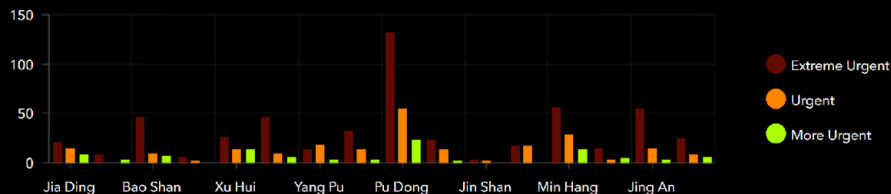
Following Messages

1604

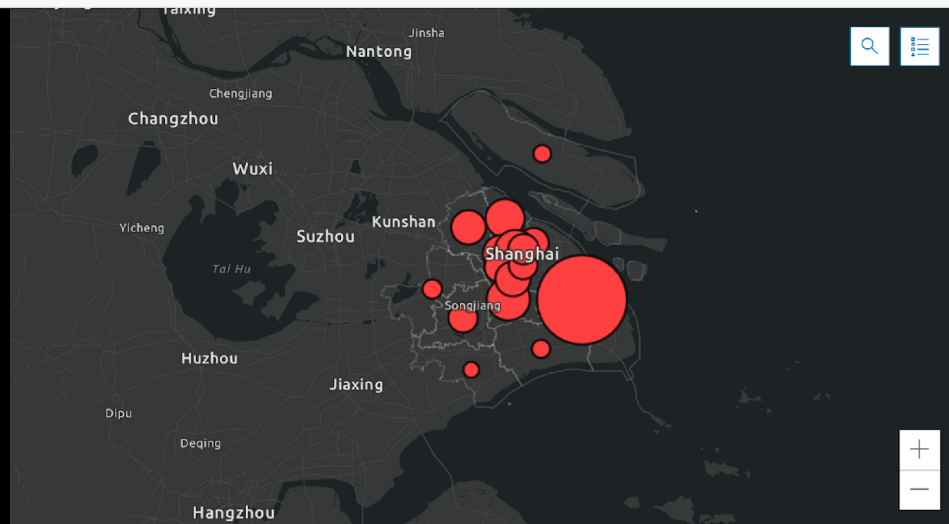
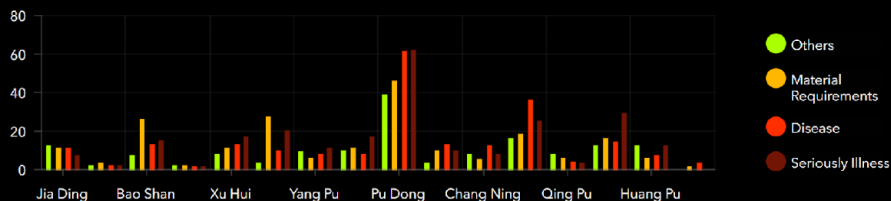
Remaining Messages

43

Statistical Analysis of Different Levels in Each District



Statistical Analysis of Different Types in Each District



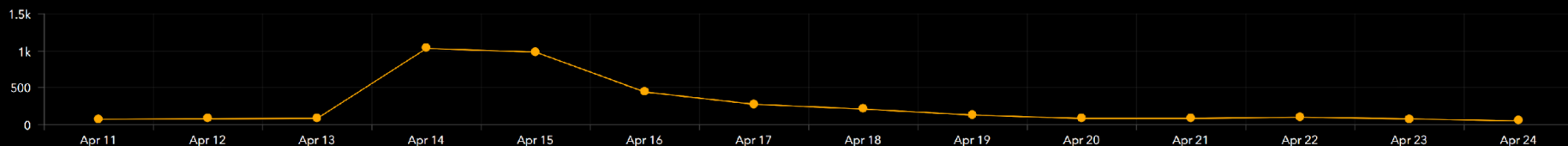
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The Distribution Map of Messages

Statistical Analysis in Fine Scale

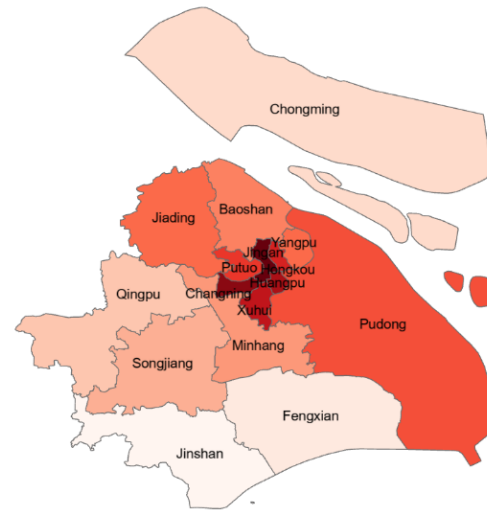
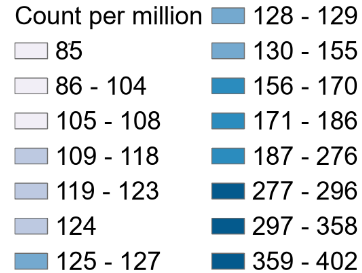
The Daily Number of Posting Messages



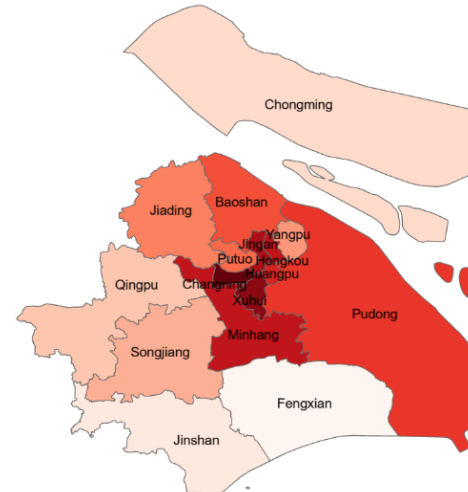
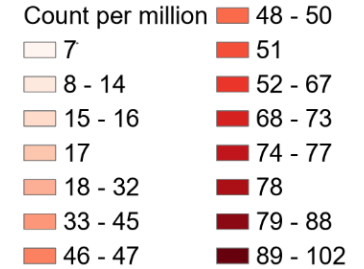
Normalized Spatial Patterns



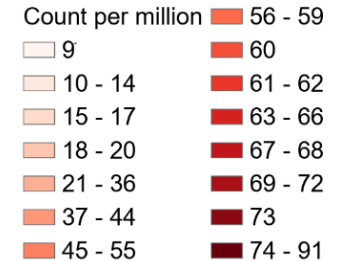
Medical Resources



Serious Disease



Disease



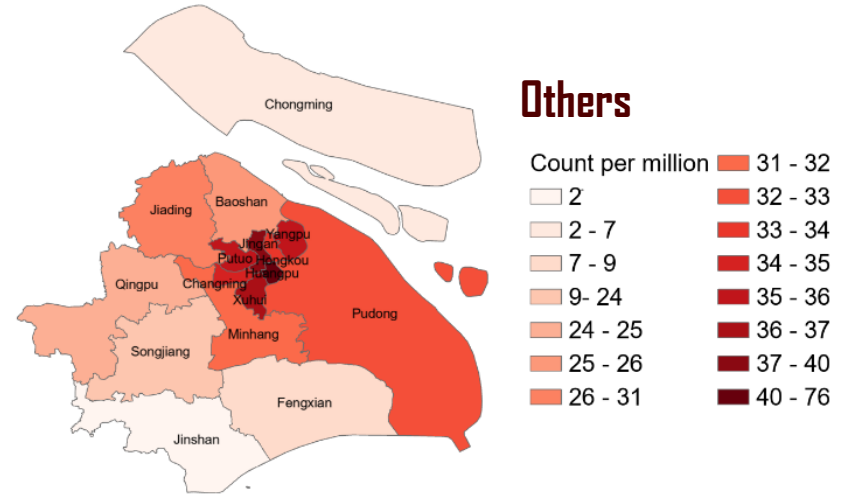
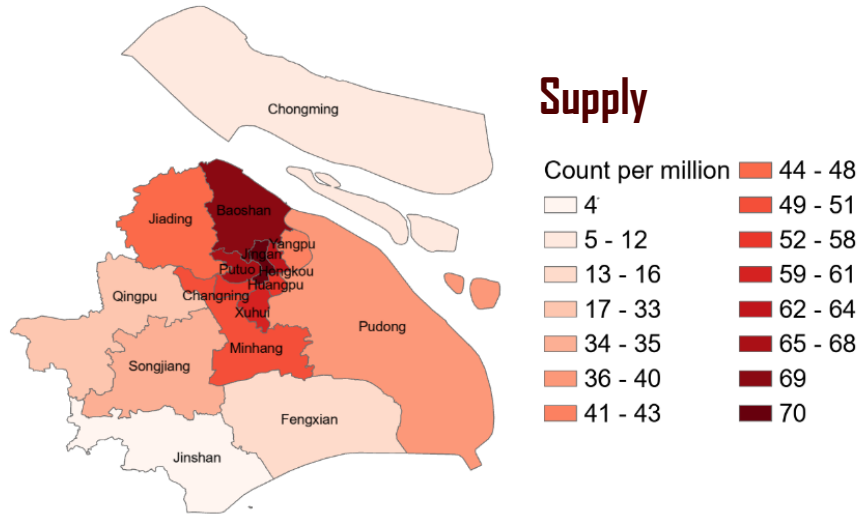
Access to medical resources



Type	Count	Relation	Min Dist	Avg RC 400m	Avg RC 1500m	Avg RC 4000m
Disease	447	Hospital	23	2.13	30	162.58
		Pharm	13	2.01	23.83	136.53
Serious Disease	497	Hospital	43	2.25	28.75	173.5
		Pharm	32	1.99	25.26	79.95

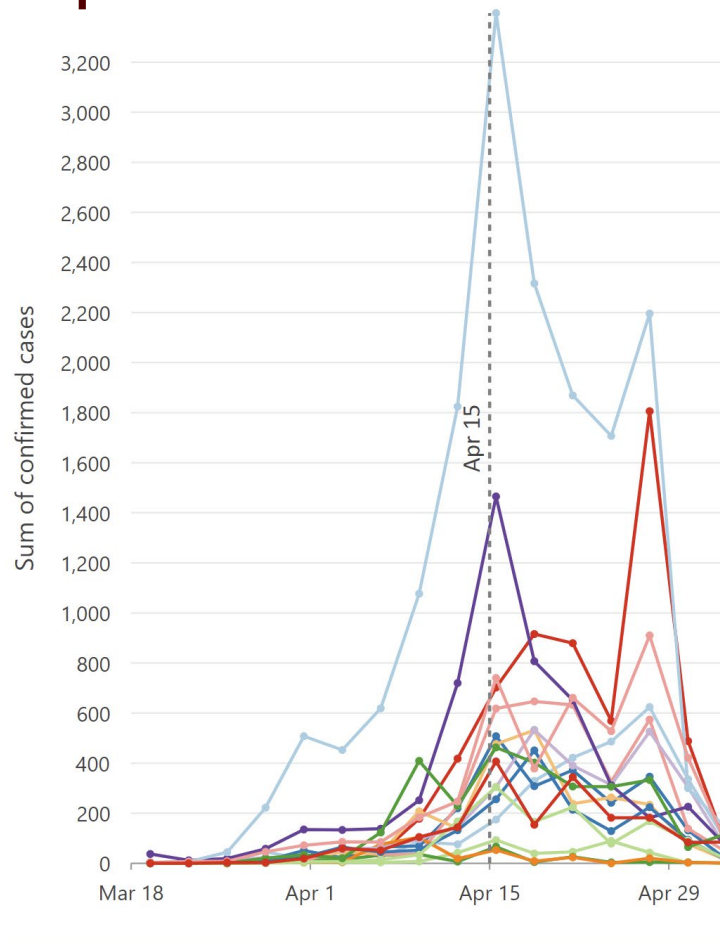


Normalized Spatial Patterns

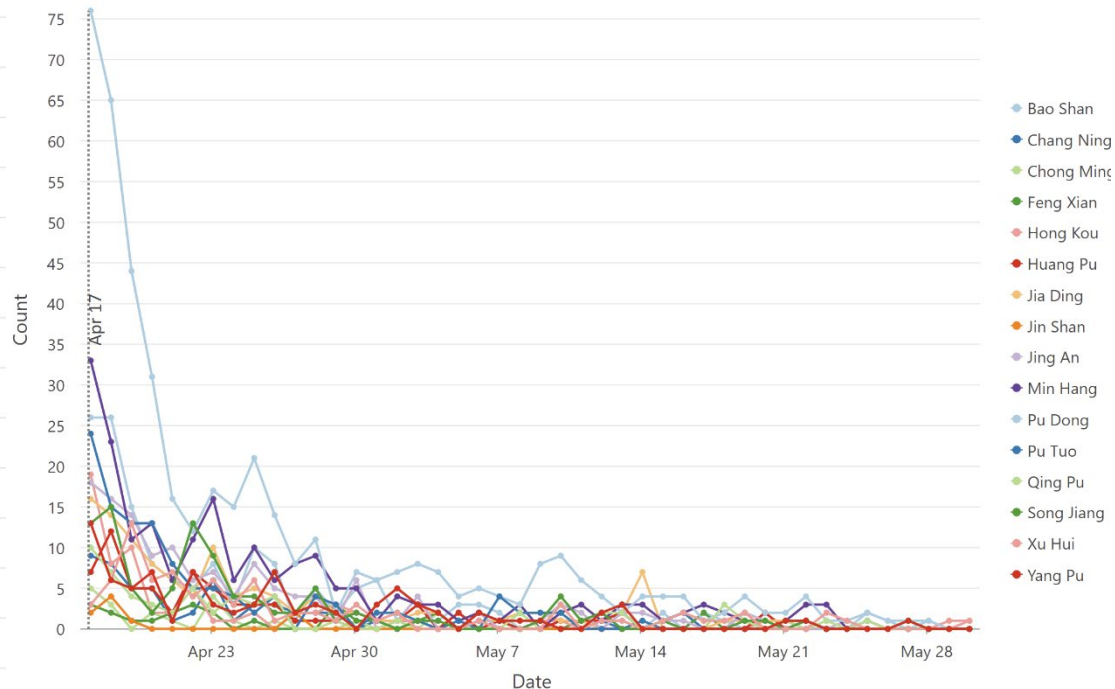


Temporal Patterns

Sum of confirmed cases over date by district



Counts over datetime by district

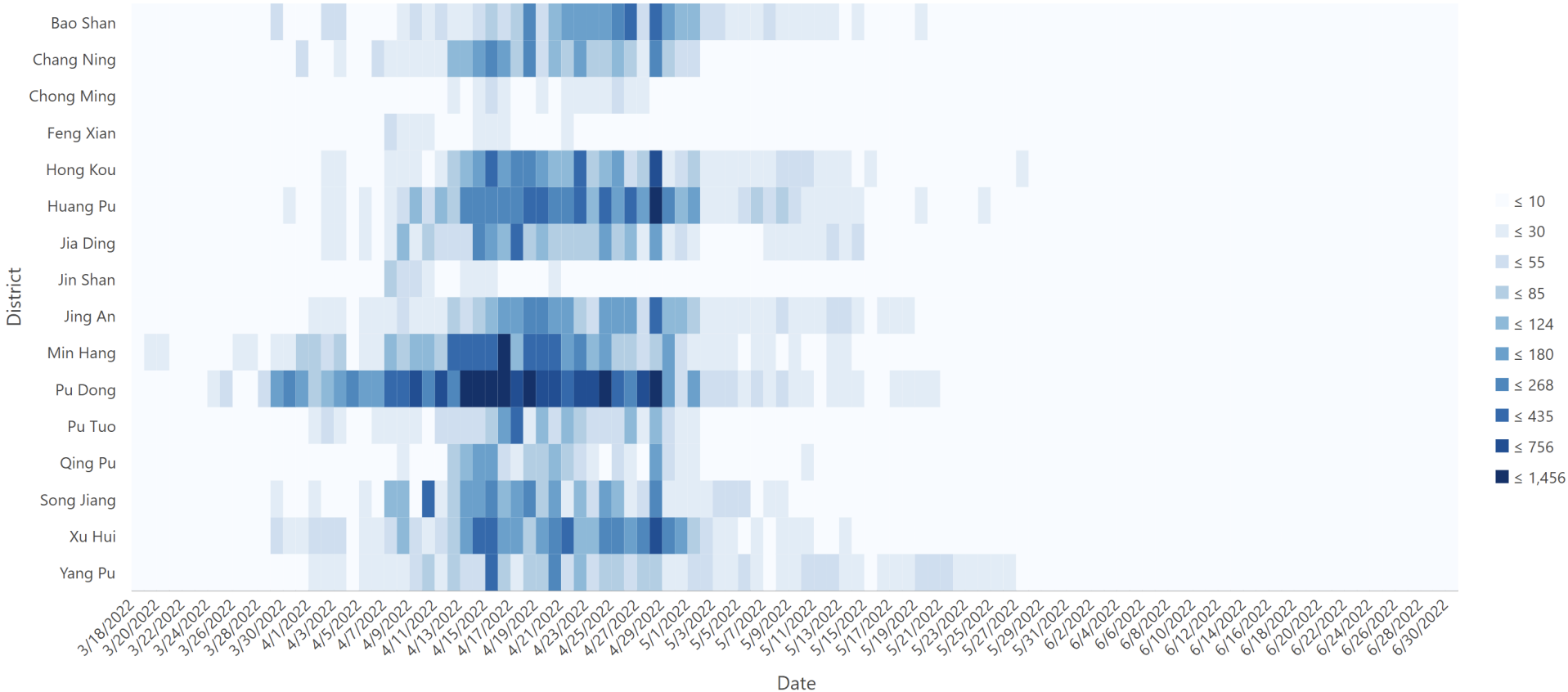


- Bao Shan
- Chang Ning
- Chong Ming
- Feng Xian
- Hong Kou
- Huang Pu
- Jia Ding
- Jin Shan
- Jing An
- Min Hang
- Pu Dong
- Pu Tuo
- Qing Pu
- Song Jiang
- Xu Hui
- Yang Pu

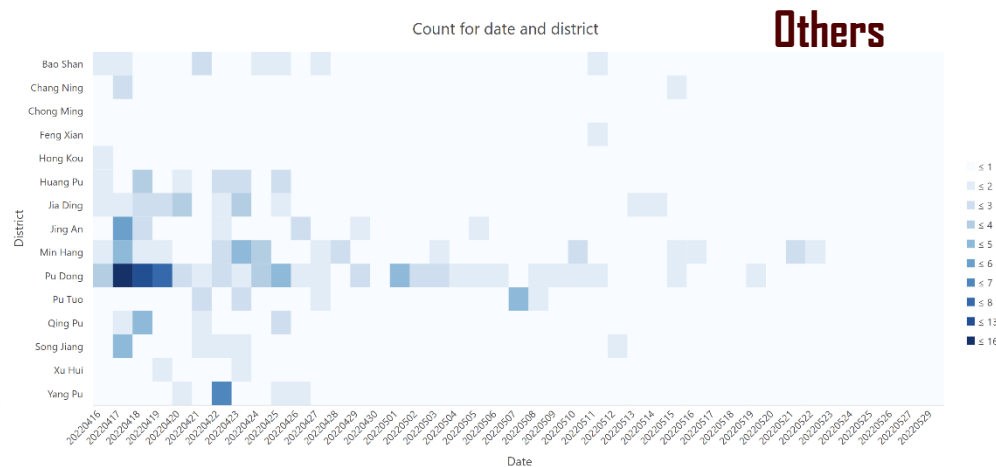
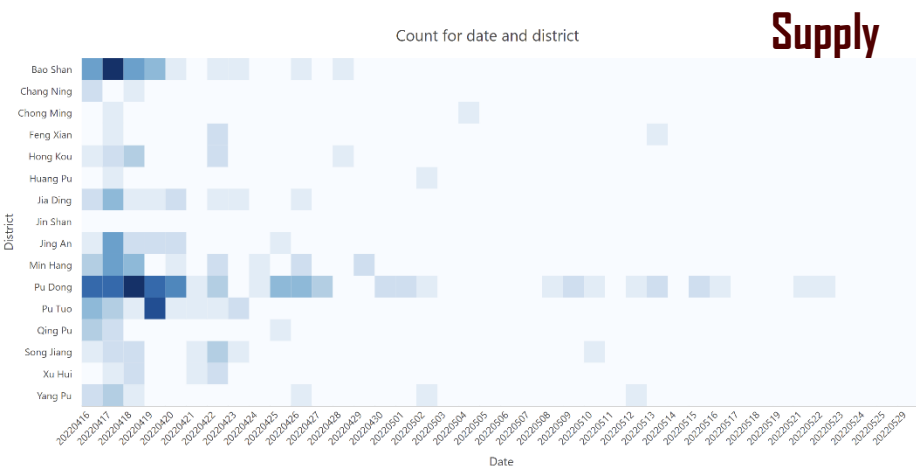
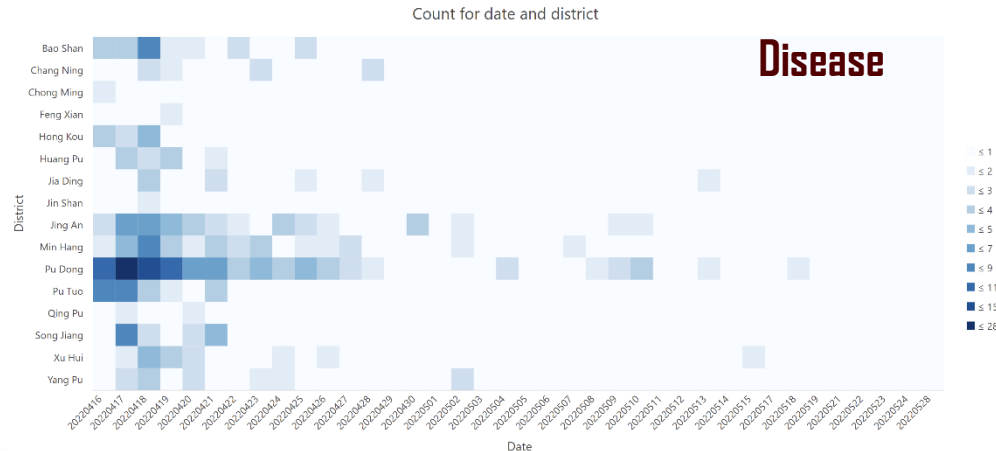
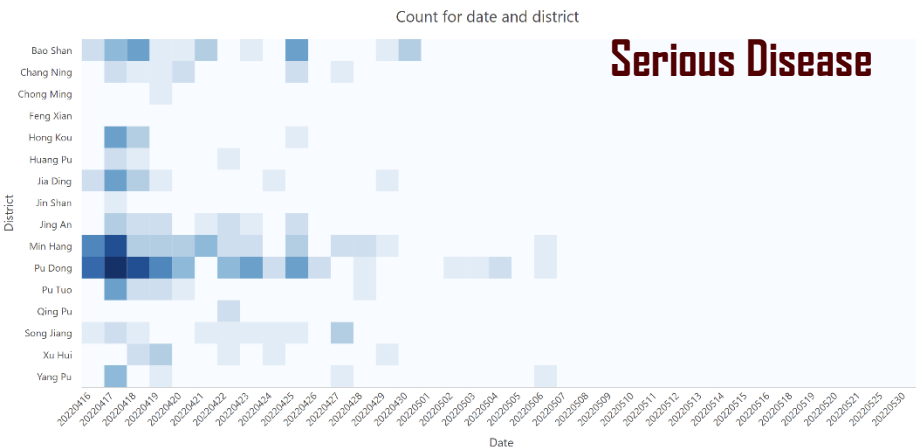
Date

Temporal Patterns of the Confirmed Cases

Sum of confirmed for date and district



Temporal Patterns of Online Help Requests



Word Cloud Visualization



Serious Disease

Keywords:

Hospital
Old man
Medication
Medicine
Capsule
Insulin
Treatment



Keywords:

Hospital
Old man
Positive
Chemotherapy
Testing
Patients
Shanghai
.....

Disease

Word Cloud Visualization



Supply

Keywords:

Home
Supplies
Vegetables
Milk powder
Eggs
Apartment
.....



Keywords:

Shanghai Quarantine Acid Community Negative Hotel Pandemic

Others

Topic Modeling

Category	Topic Number	Topics Chinese	Topic English
Extremely Urgent	4	老人需要化疗 核酸阳性需隔离转运 家里需要配药	Aged people need chemotherapy Covid test positive; need transfer to hospital Need medicine at home
Urgent	4	家中母亲需要胰岛素 需要奶粉配送 家中需要物资及药物	Mother at home need insulin Require milk powder delivery Need supplies and medication
Normal	4	蔬菜泡面鸡蛋 居委会核酸检测 隔离物资及药物	vegetables, instant noodles, eggs community covid test quarantine supplies and medicine
Disease	4	药品 精神 胰岛素、盐酸、高血压、注射液	psychotropic drugs insulin, hydrochloric acid, high blood pressure, injection
Serious Disease	4	普兰，西酞，富马酸，草酸，胰岛素 老人需要化疗 老人病重透析 老人核酸阳性	Citalopram, oxalic acid, fumaric acid, insulin Aged people need chemotherapy Aged people need dialysis Aged people covid test positive
Supply	3	奶粉泡面卫生巾牛奶 蔬菜面包大米 团购蔬菜水果	milk powder, instant noodles, milk, sanitary pad vegetables, bread, rice group purchase vegetables and fruit
Others	4	希望隔离酒店 社区接种疫苗 隔离返乡火车站	wish quarantine hotel vaccination by community service isolation, train station back home



Background



Objectives



Methodology



Results



Background



Objectives



Methodology



Results



Conclusions

Conclusions



Dashboard

Dashboard has been created to help local and visualize help requests in near real time...



Temporal

Over 4000 help request posted. Daily number drop 2-3 days after confirmed cases drop...



Spatial

The city centers are affected more intensely than the other parts of Shanghai...



Semantic

People who require long-term or frequent medical treatment are unable to be serviced...



Thank you !



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