China Data Institute

Center for Geographic Analysis
Harvard University

社会地理计算联合研究中心
Geocomputation Center for Social Science

RMDS

Global Research on COVID-19

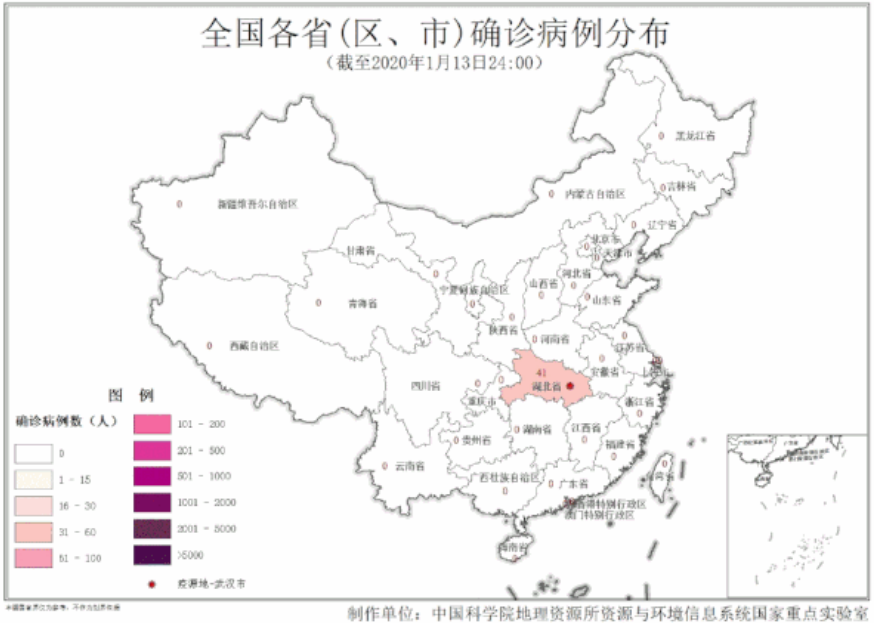
新冠病毒数据资源与全球研究项目

中国数据研究所所长 鲍曙明

http://chinadatalab.net

每日省市新冠病毒案例分布COVID-19 Cases

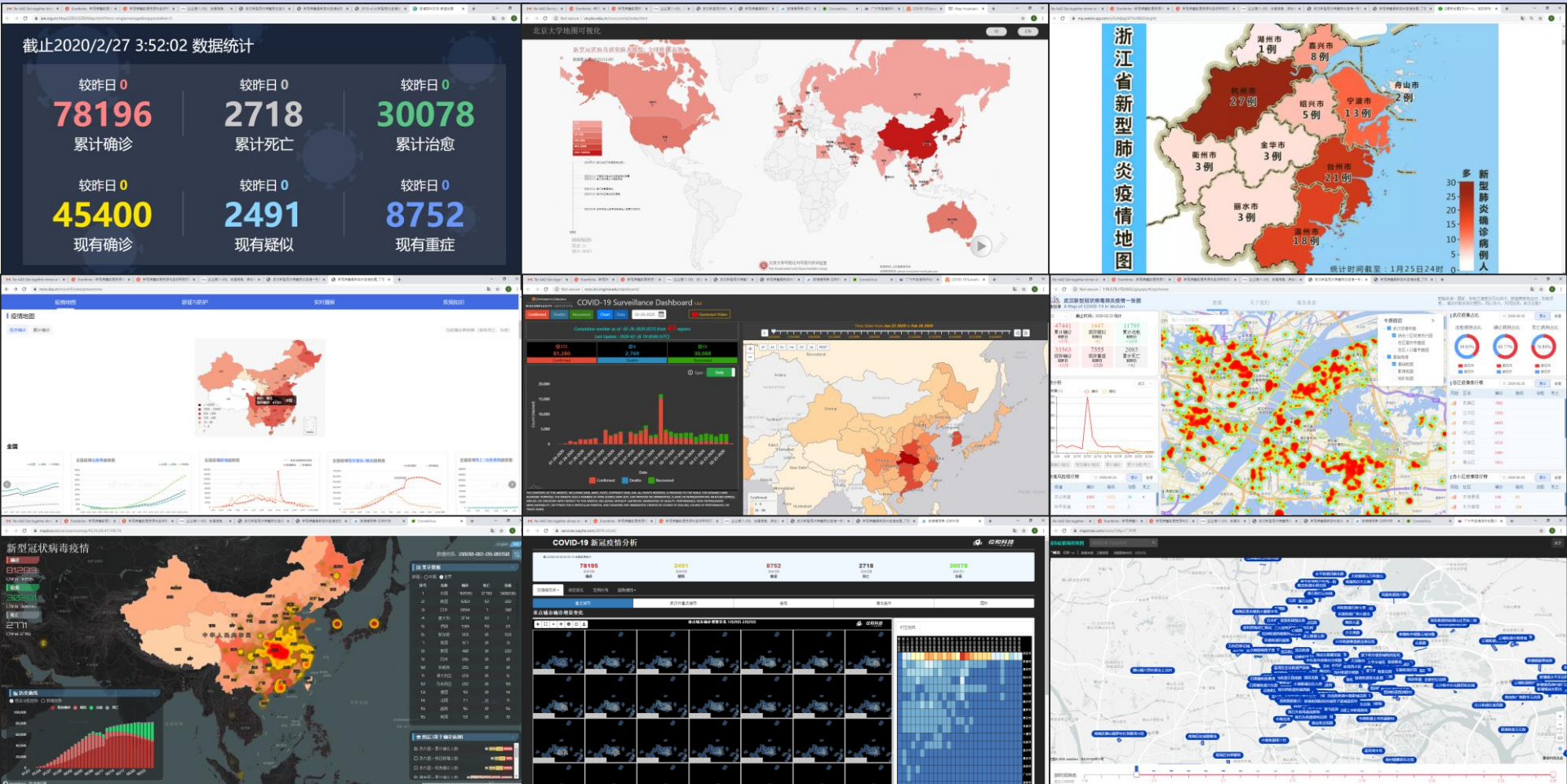
Daily Updates of Confirmed COVID-19 Cases by Province



Daily Updates of Confirmed COVID-19 Cases by City

Source: The project team for mapping story, the Institute of Geographical Science and Resources of the Chinese Academy of Sciences
中国科学院地理科学与资源研究所资源与环境信息系统国家重点实验室图说工作组
https://mp.weixin.qq.com/s/OTo_HTCXttoH8CQrnXfFIQ

各家疫情网站地图发布



截止2020/2/27 3:52:02 数据统计
较昨日 0
78196
累计确诊
较昨日 0
2718
累计死亡
较昨日 0
30078
累计治愈
较昨日 0
45400
现有确诊
较昨日 0
2491
现有疑似
较昨日 0
8752
现有重症
北京大学地图可视化
浙江省新型肺炎疫情地图
湖州市 1例
嘉兴市 8例
杭州市 27例
绍兴市 5例
宁波市 13例
舟山市 2例
衢州市 3例
金华市 3例
台州市 21例
丽水市 3例
温州市 18例
新型肺炎确诊病例人
统计时间截至：1月25日24时
COVID-19 Surveillance Dashboard
新型冠状病毒疫情
COVID-19 新冠疫情分析

17年前的SARS详细数据，何时公开？

Where can we find the data for SARS of 17 years ago?

Source: https://zhuanlan.zhihu.com/p/107292732

pixabay.com

撰文 | 夏志坚

责编 | 陈晓雪

截至2月15日24时，中国大陆的新冠肺炎累计确诊病例达到68500例，疑似病例8228例，累计死亡病例达到1665人。

这场始于2019年年底的疫情，令不少人回想起在2003年春季爆发的SARS疫情。两者的发展似乎存在不小的相似性：病原体都是由动物传染到人的冠状病毒，都在上一年的年末发现无法确诊的肺炎病例，都遭遇过春运的人流高峰（2003年的除夕是1月31

在国家卫健委的官方网站，以“SARS”为关键词搜索，718条结果（截至2月16日下午）亦缺乏中国大陆地区疫情各阶段的详细数据 [3]。其中有一条链接名为“SARS防治专题”，但打开链接，里面没有任何与SARS有关的有效信息，所有子链接都是空白

疫情数据研究共享存在的几个主要问题

(1) 数据序列断裂化：数据标准不断变化，缺少系统说明;
(2) 公开数据短期化：缺少历史积累;
(3) 数据存储零散化：不利永久保存;
(4) 数据来源差异化：不利数据比较;
(5) 数据内容离散化：不利发挥综合价值;

此外数据与方法分离，数据与工具分离，数据产权、数据私密性、敏感性，以及大数据与研究成果如何共享也是此类数据研究共享面临的一些核心问题。

宗旨和目标Goal and Objectives

Goal: to provide an information infrastructure for the global study of novel coronavirus (COVID-19)

Objectives:

- To establish a **permanent collection** for the COVID-19 study at local, regional and global levels with information collected and integrated from different sources
- To facilitate the quantitative research on spatial spread and impacts of COVID-19 study with advanced **methodology and technology**
- To promote collaborative research in the COVID-19 study with the **cloud platform**
- To promote the use and sharing of data sources in **teaching and research** with DataVerse/WorldMap/CDL
- To build the **capacity** for future collaborative projects

参与团队Teams

CGA

The Center for Geographical Analysis (CGA) at Harvard University. Its core mission is to support research and teaching in all disciplines across Harvard University with emerging geospatial technologies.

CDI

The China Data Institute, a Michigan based not-for-profit organization. It aims to promote the use and sharing of China data; support quantitative research on China in social science, digital humanity and other research subjects.

GCSS

The GeoComputation Center for Social Science at Wuhan University. It promotes the scientific research on the theory and method of spatial data in scientific research, personnel training, international cooperation and social practice.

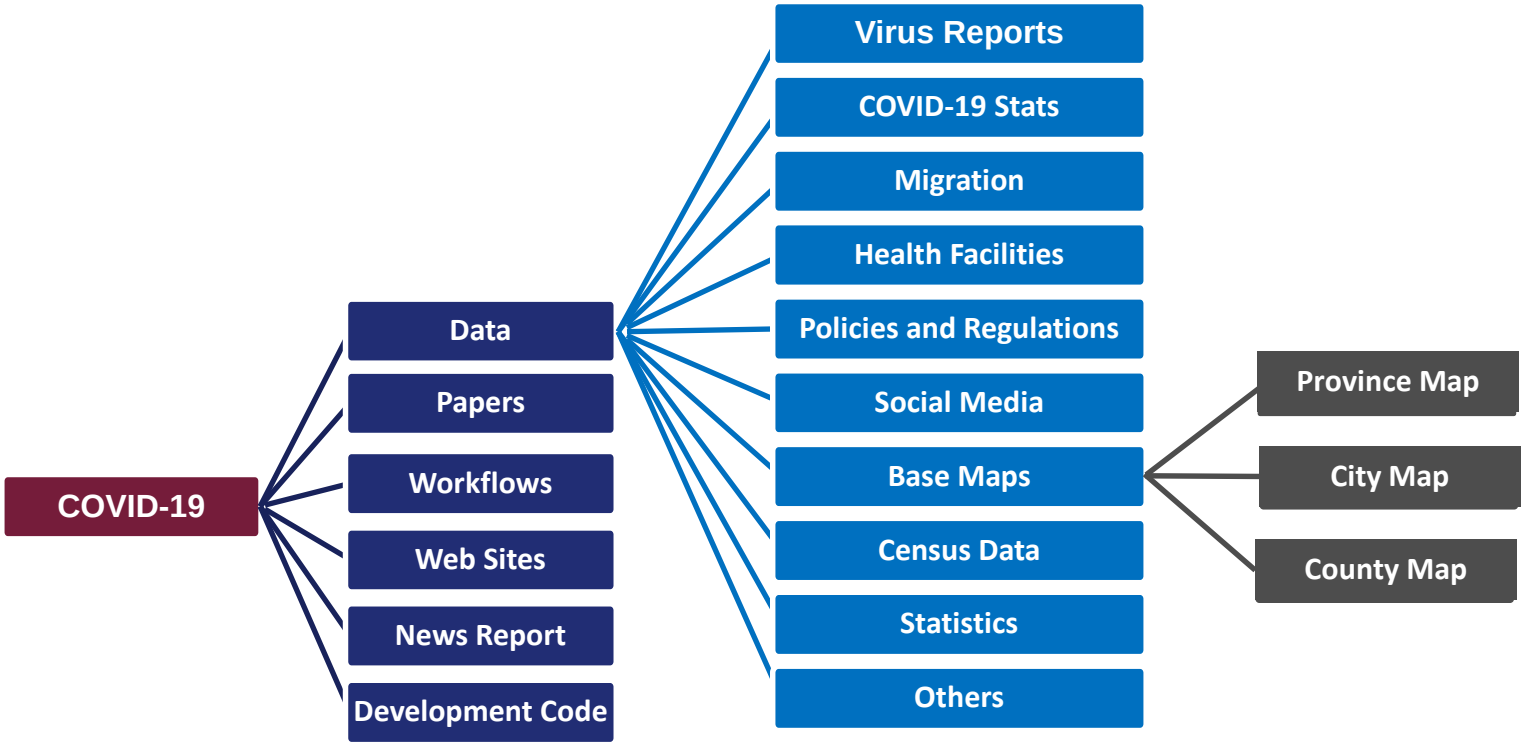
RMDS

The RMDS Lab is designed to serve a global community of companies and data scientists, empowering them to reap the benefits of big data, artificial intelligence, and machine learning.

主要任务Tasks

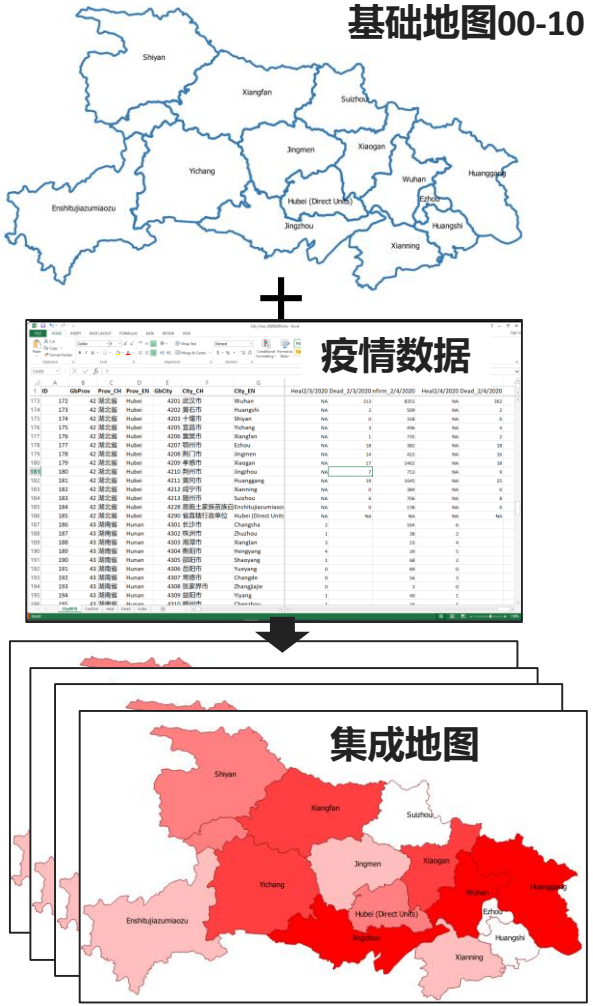
- 数据收集 **Data collection (WHU)**
  - Reported data of virus cases at country, province, and city levels
  - Migration
  - Social media
  - New polices and regulations on virus control by China and other countries
  - Links to other web sites on related projects
  - Related publications
- 数据集成 **Data integration (WHU and CDI)**
  - Maps
  - Gov't statistics and Census data
- 数据分析 **Data report (RMDS, WHU, CDI and CGA)**
  - Data analysis
  - PPTs
  - Workflows
- 数据发布 **Data distribution (CGA)**
  - DataVerse for data management at Harvard (http://covid-19.chinadatalab.net)
  - Workflow on Spatial Data Lab at Harvard (http://harvard.chinadatalab.org)
  - Project description and events on http://chinadatalab.net
- 数据培训与交流 **Workshops and seminars (CDI, RMDS, WHU and CGA)**
  - China Data Webinar co-hosted by RMDS and China Data Institute
  - Harvard workshop on March 27, 2020, hosted by Harvard Fairbank Center for Chinese Studies

数据结构Data Structure of Resources for COVID-19

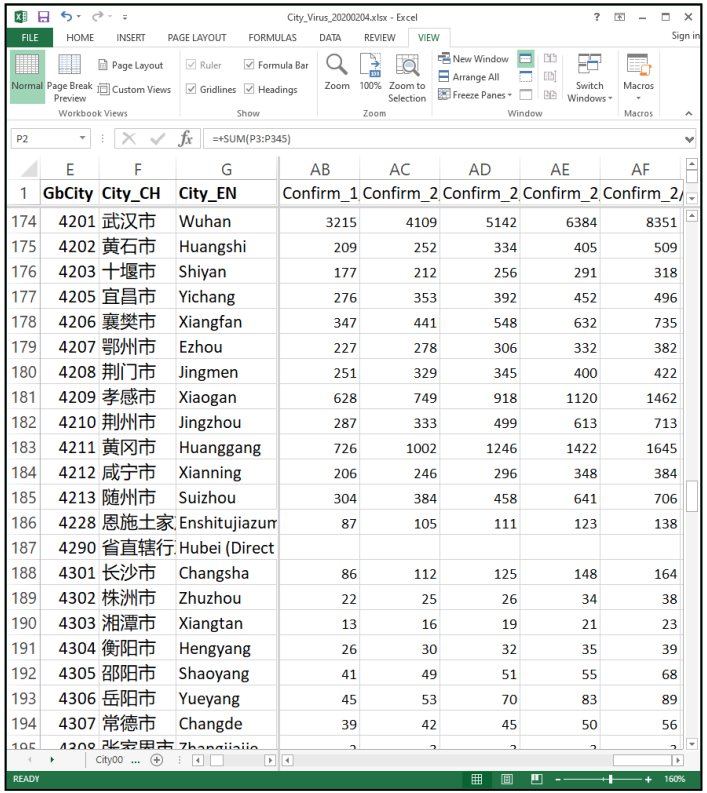


数据来源Data Sources

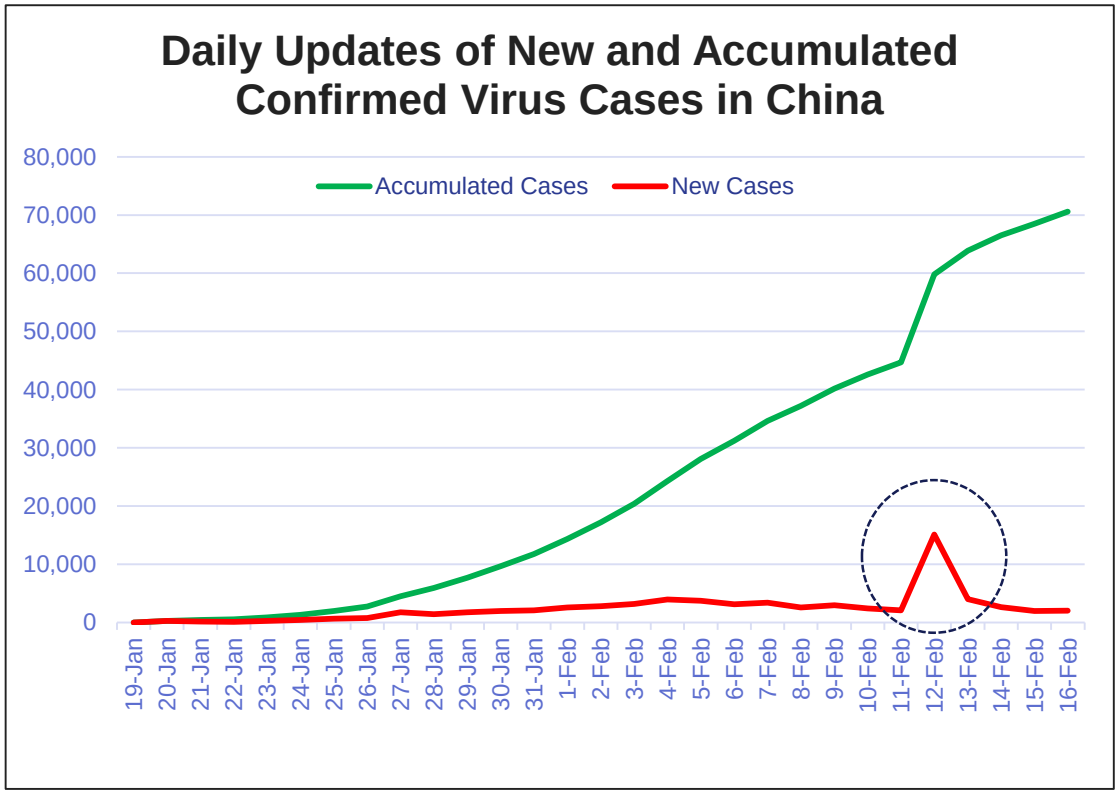
- **Base data 基础数据**
  - Base maps (province, prefecture and county)
  - Census data (population census and economic census)
  - Statistics (province, prefecture and county)
  - Others
- **Virus data病毒案例**
  - Virus reports from gov't (country, province and city)
- **Migration data迁徙人口**
  - Daily floating population data (Baidu)
  - Migration data from census (NBS)
- **Health facility data 健康设施**
  - POI data (AutoNavi)
  - Economic Census (NBS)
- **Social media data社会媒体**
  - Weibo
  - Twitter
- **Papers论文**
- **Reports报告**
- **Policies and regulations政策与法规**



每日确诊案例数据Daily Confirmed Virus Cases

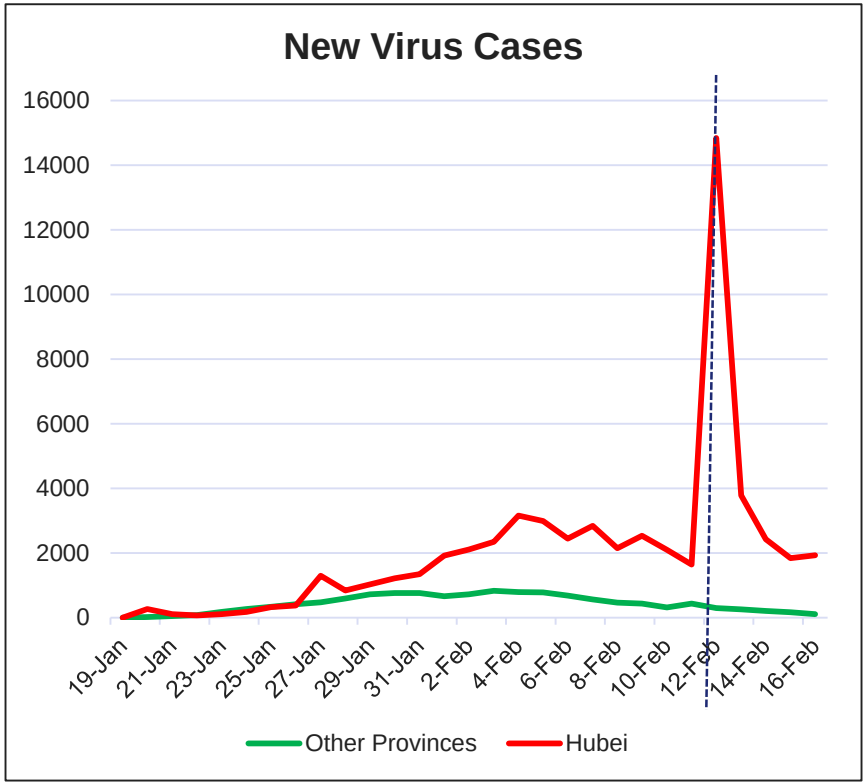


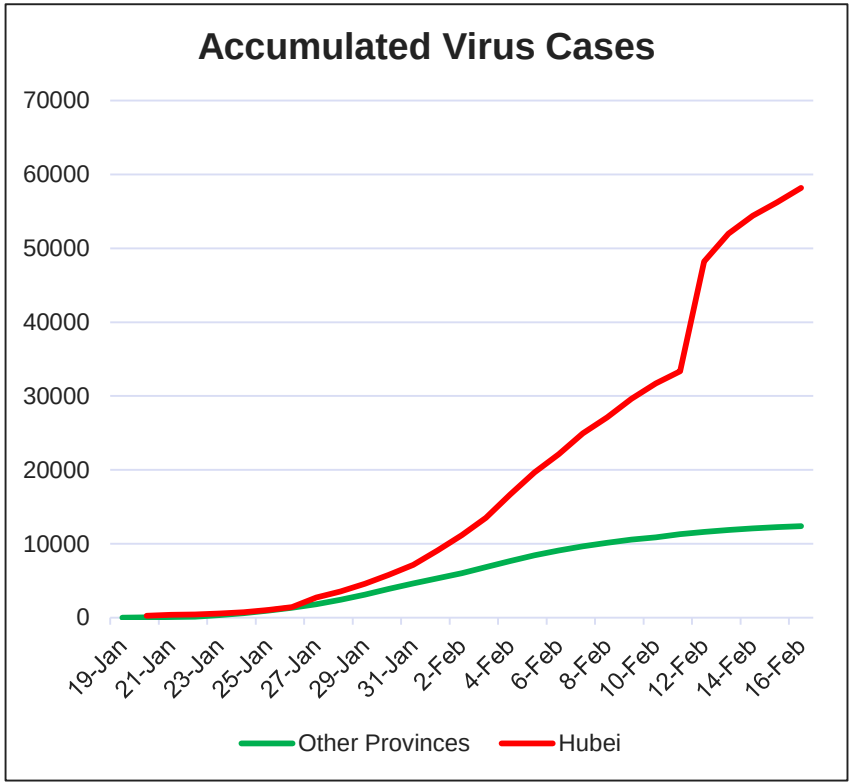
	E	F	G	AB	AC	AD	AE	AF
1	GbCity	City_CH	City_EN	Confirm_1	Confirm_2	Confirm_2	Confirm_2	Confirm_2/
174	4201	武汉市	Wuhan	3215	4109	5142	6384	8351
175	4202	黄石市	Huangshi	209	252	334	405	509
176	4203	十堰市	Shiyan	177	212	256	291	318
177	4205	宜昌市	Yichang	276	353	392	452	496
178	4206	襄樊市	Xiangfan	347	441	548	632	735
179	4207	鄂州市	Ezhou	227	278	306	332	382
180	4208	荆门市	Jingmen	251	329	345	400	422
181	4209	孝感市	Xiaogan	628	749	918	1120	1462
182	4210	荆州市	Jingzhou	287	333	499	613	713
183	4211	黄冈市	Huanggang	726	1002	1246	1422	1645
184	4212	咸宁市	Xianning	206	246	296	348	384
185	4213	随州市	Suizhou	304	384	458	641	706
186	4228	恩施土家	Enshitujiazum	87	105	111	123	138
187	4290	省直辖行	Hubei (Direct					
188	4301	长沙市	Changsha	86	112	125	148	164
189	4302	株洲市	Zhuzhou	22	25	26	34	38
190	4303	湘潭市	Xiangtan	13	16	19	21	23
191	4304	衡阳市	Hengyang	26	30	32	35	39
192	4305	邵阳市	Shaoyang	41	49	51	55	68
193	4306	岳阳市	Yueyang	45	53	70	83	89
194	4307	常德市	Changde	39	42	45	50	56



Data source: Ding Xiang Yuan, Real-time virus report (https://ncov.dxy.cn/ncovh5/view/pneumonia)

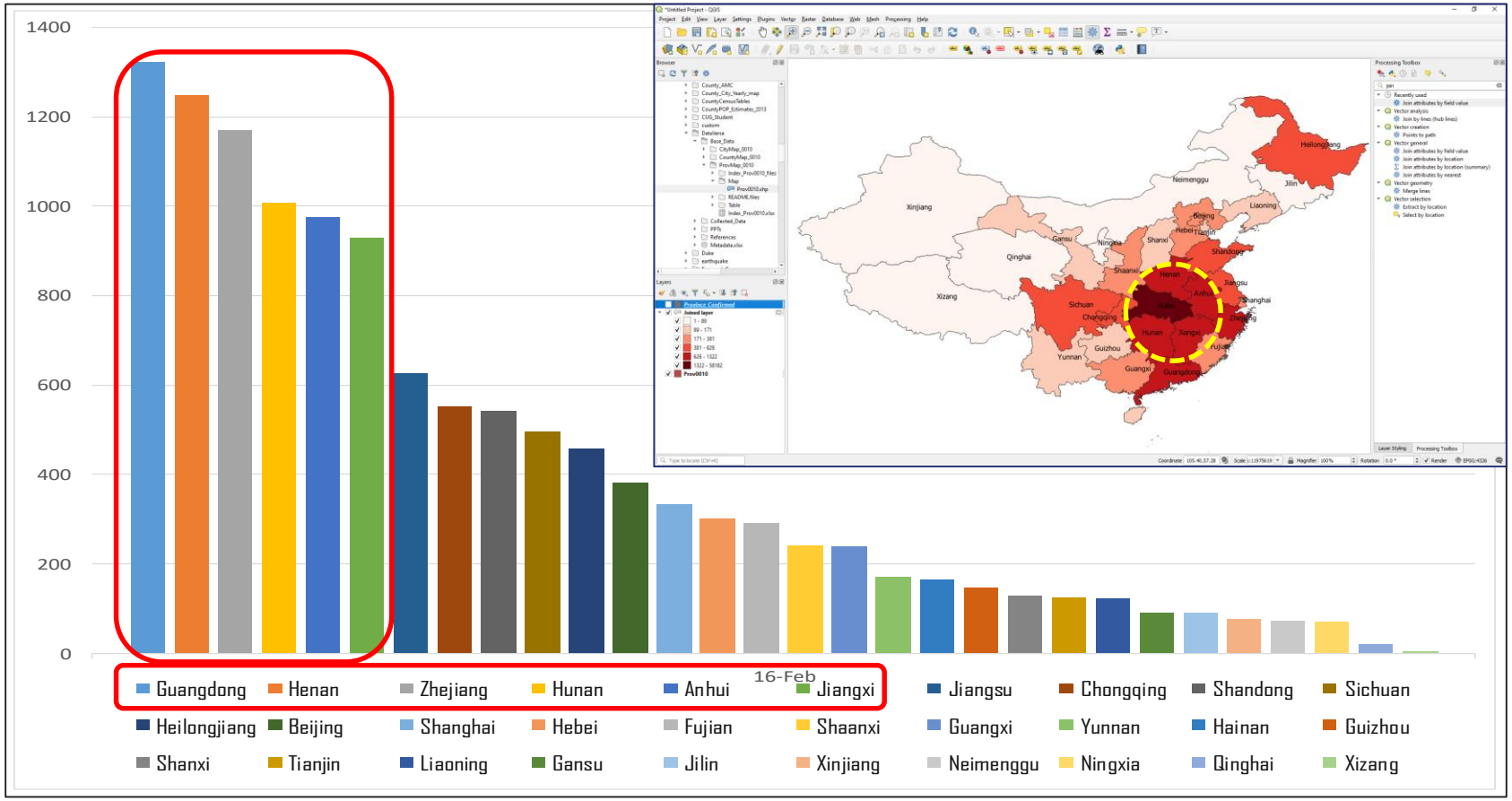
如何理解疫情数据：湖北与他省
Read the Virus Data: Hubei & Other Provinces





Data source: Ding Xiang Yuan, Real-time virus report (https://ncov.dxy.cn/ncovh5/view/pneumonia)

省级确认病例As of Feb 16, 2020



武汉市每日流动人口地图As of Jan 23, 2020

Data Source: https://qianxi.baidu.com

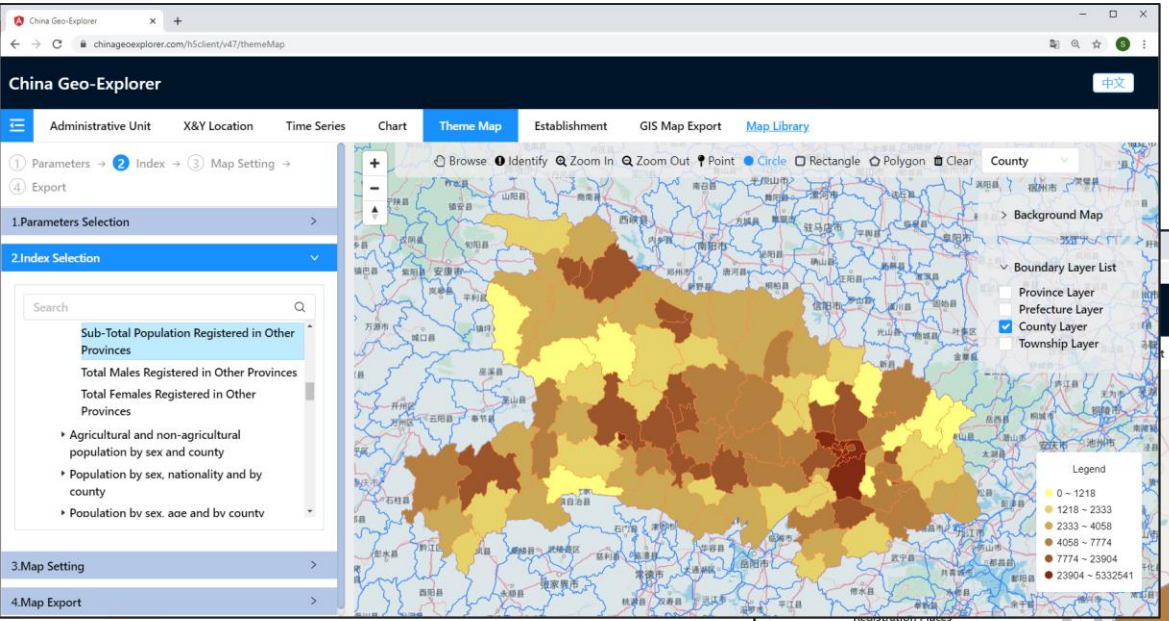
外地流向武汉

武汉流向外地

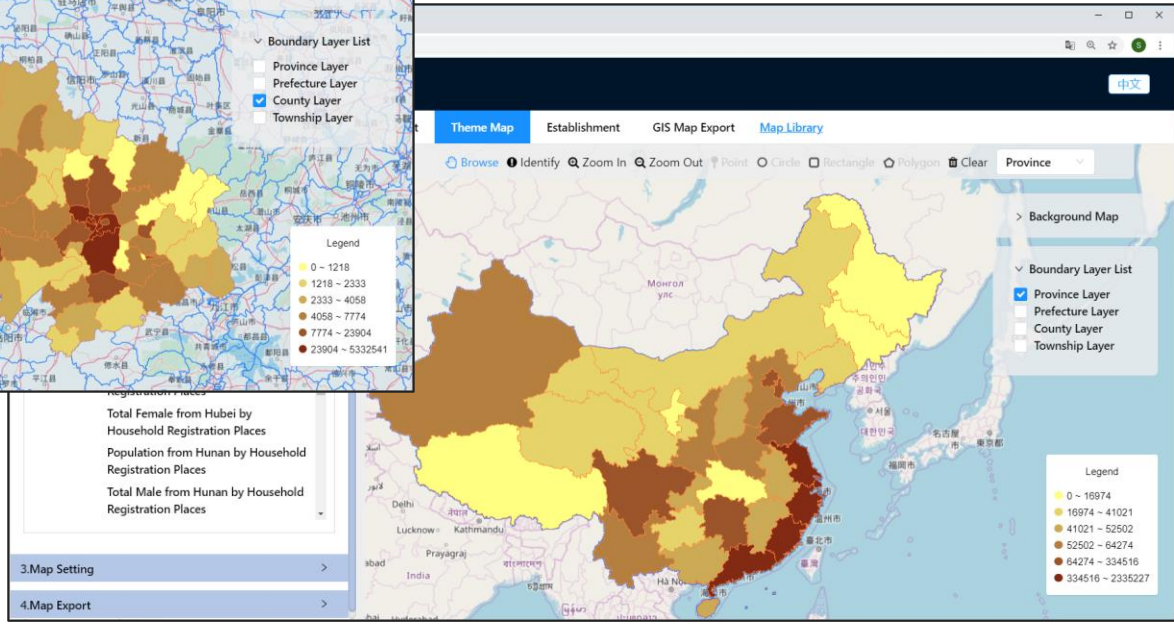
基于2010年人口普查的迁移人口 (> 6 月& < 5 年)

Data Source: https://china-data-online.com

湖北各县区来自其他省份的迁移人口

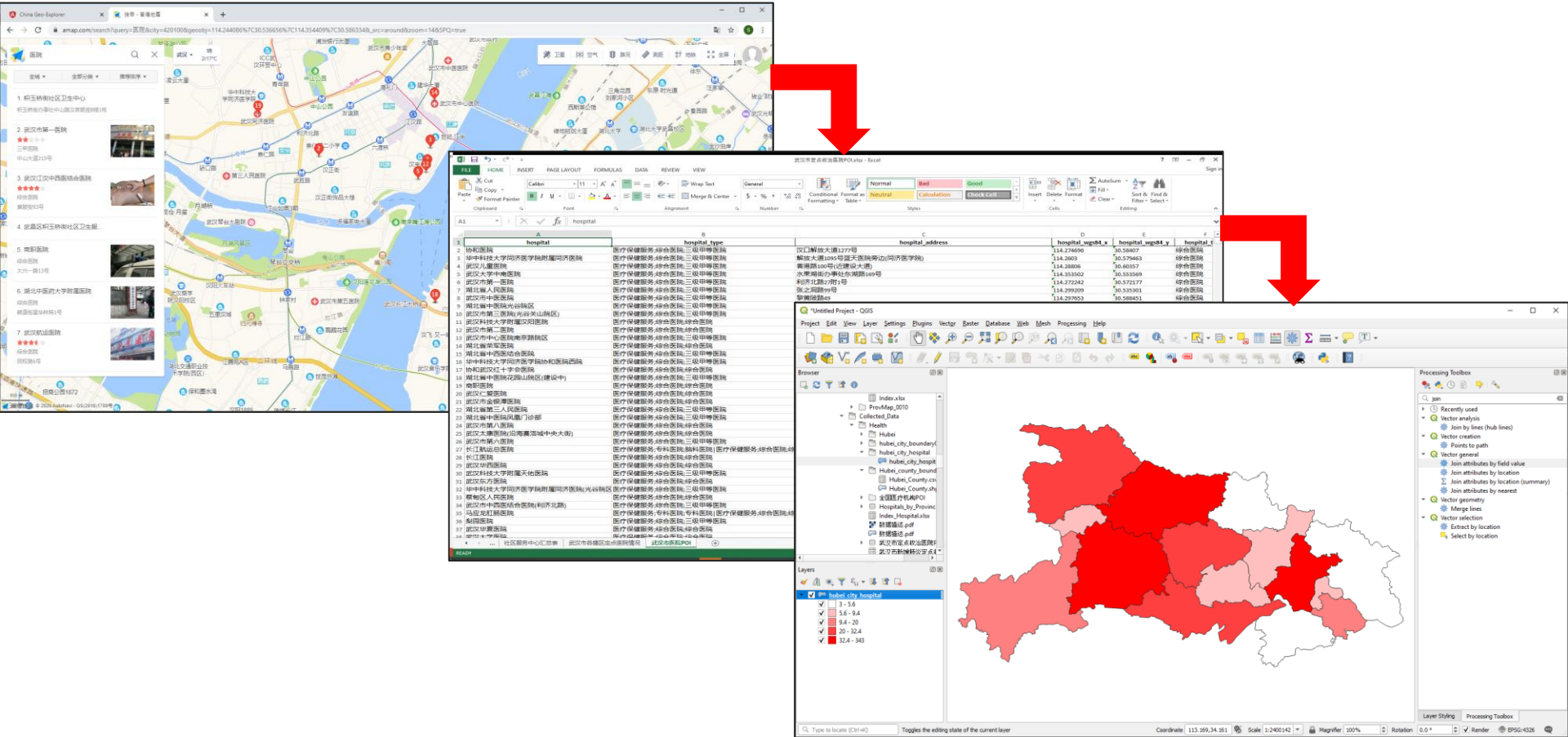


从湖北流向其他省份的迁移人口



来自高德地图的武汉医院分布数据

Data Source: https://lbs.amap.com



医院数据爬虫与地图集成

Data Source: https://lbs.amap.com

获取高德POI数据HTTP接口，
确定POI所属类型及所属位置的行政区划范围

↓

解析JSON格式数据并存储标签为pois中的POI数据，参数包括医院名称，所属POI类型，语义地址，WGS84坐标系下的坐标，所属行政区划单元

↓

建立国家卫生机构分类标准与高德地图POI分类标准映射关系

↓

对医院类型进行匹配，以省级行政区划为单位存储为Excel格式文件

↓

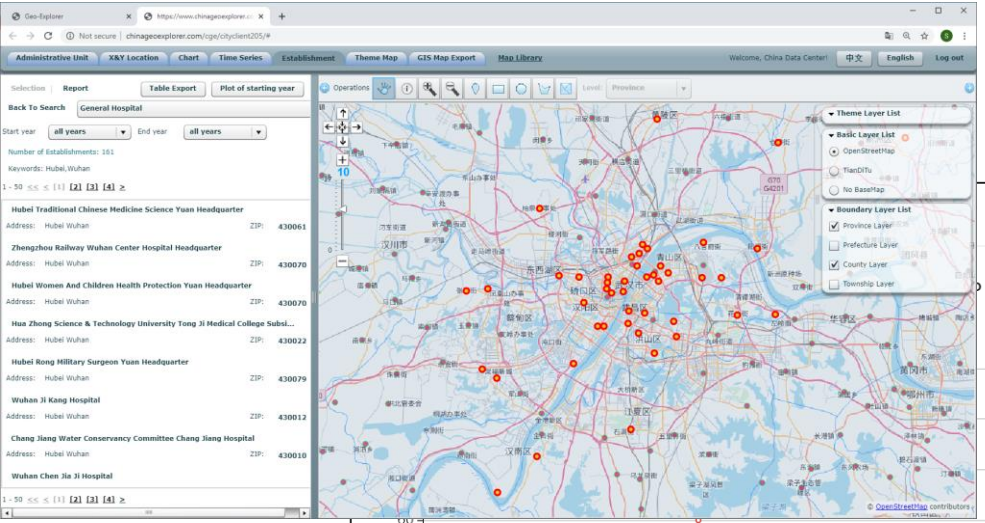
根据省、市、县区行政区划地图进行匹配和合并

Name_CH	Name_EN
医院总数	Total Hospital Number
三级甲等医院	Tertiary Hospital
专科医院	Specialist Hospital
传染病医院	Infectious Disease Hospital
医疗保健服务场所	Healthcare Services
卫生院	Health Center
口腔医院	Dental Hospital
妇科医院	Women's Hospital
急救中心	Emergency Center
整形美容	Plastic Surgery
疾病预防	Prevent Disease Center
眼科医院	Eye Hospital
精神病医院	Psychiatric Hospital
综合医院	general Hospital
耳鼻喉医院	ENT Hospital
肿瘤医院	Cancer Hospital
胸科医院	Chest Hospital
脑科医院	Brain Hospital
诊所	Clinic
骨科医院	Orthopaedic Hospital

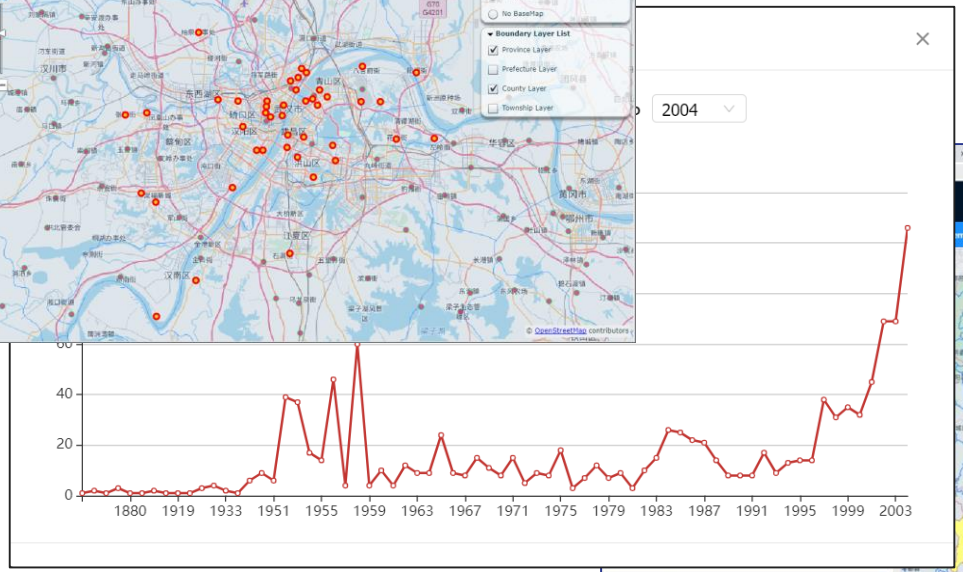
来自经济普查的医院数据(2004 & 2008)

Data Source: https://china-data-online.com

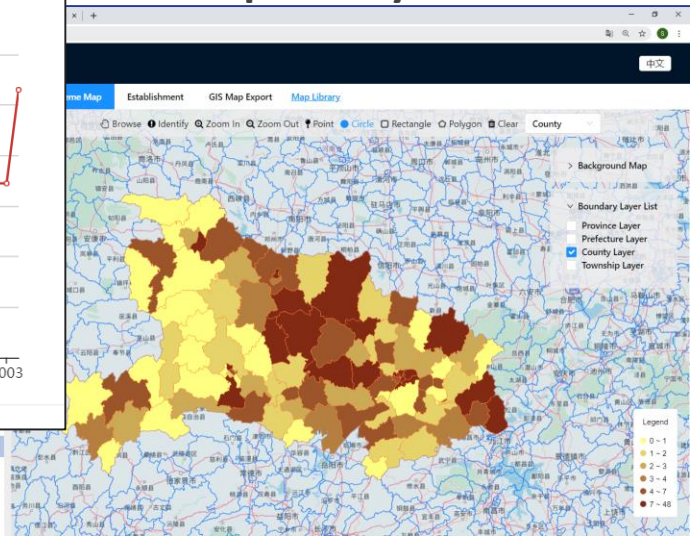
Locations of general hospitals in Wuhan



New hospitals by year



Hospitals by Counties



基于人口普查的2000 to 2010年人口变化数据

Data Source: https://china-data-online.com

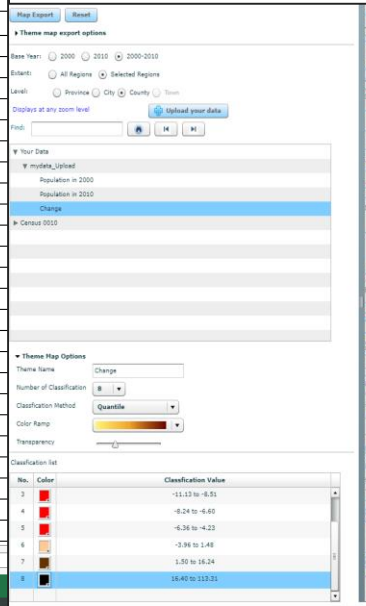
B5 市级的四位码

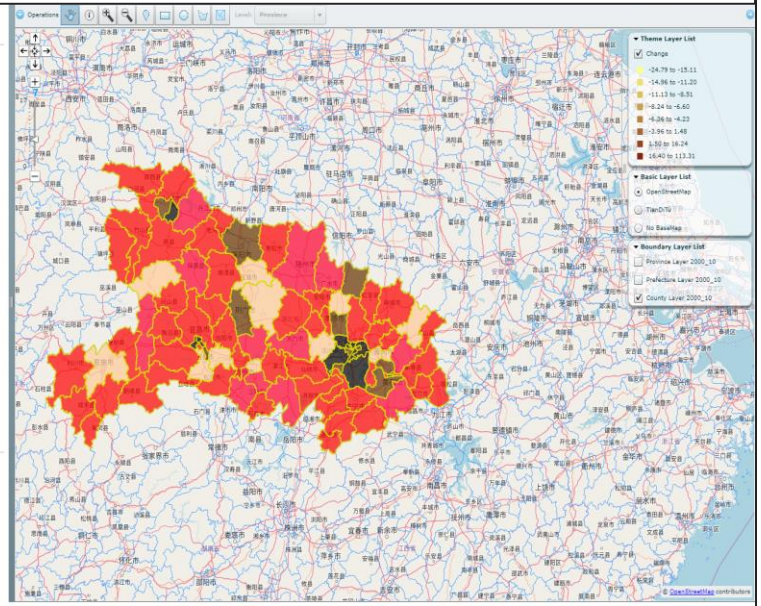
	A	B	C
4	Prov_EN	所在省的英文名称	English name of Province
5	GbCity	市级的四位码	Four digit code of City in number
6	City_CH	所在市的中文名称	Chinese name of City
7	City_EN	所在市的英文名称	English name of City
8	GbCounty	区县级的六位码	Six digit code of County in number
9	County_CH	所在区县的中文名称	Chinese name of County
10	County_EN	所在区县的英文名称	English name of County
11	A100008_00	2000年城镇人口数	Urban Population in 2000
12	A100008_10	2010年城镇人口数	
13	A100009_00	2000年乡村人口数	
14	A100009_10	2010年乡村人口数	
15	A101001_00	2000年总户数合计	
16	A101001_10	2010年总户数合计	
17	A101002_00	2000年属家庭户的户数	
18	A101002_10	2010年属家庭户的户数	
19	A101003_00	2000年属集体户的户数	
20	A101003_10	2010年属集体户的户数	
21	A101004_00	2000年总人口数合计	
22	A101004_10	2010年总人口数合计	
23	A101005_00	2000年男性人口数合计	
24	A101005_10	2010年男性人口数合计	
25	A101006_00	2000年女性人口数合计	
26	A101006_10	2010年女性人口数合计	
27	A103001_00	2000年户籍人口数	
28	A103001_10	2010年户籍人口数	
29	A104001_00	2000年户口登记地在外乡镇街道的总人口合计	
30	A104001_10	2010年户口登记地在外乡镇街道的总人口合计	
31	A104004_00	2000年户口登记地在本县（市、区）的人口小计	
32	A104004_10	2010年户口登记地在本县（市、区）的人口小计	
33	A104007_00	2000年户口登记地在本省其他县（市、区）的人口小计	
34	A104007_10	2010年户口登记地在本省其他县（市、区）的人口小计	
35	A104010_00	2000年户口登记地在省外的人口小计	
36	A104010_10	2010年户口登记地在省外的人口小计	
37	A105004_00	2000年农业户口人口小计	
38	A105004_10	2010年农业户口人口小计	
39	A105007_00	2000年非农业户口人口小计	
40	A105007_10	2010年非农业户口人口小计	

VarList

READY

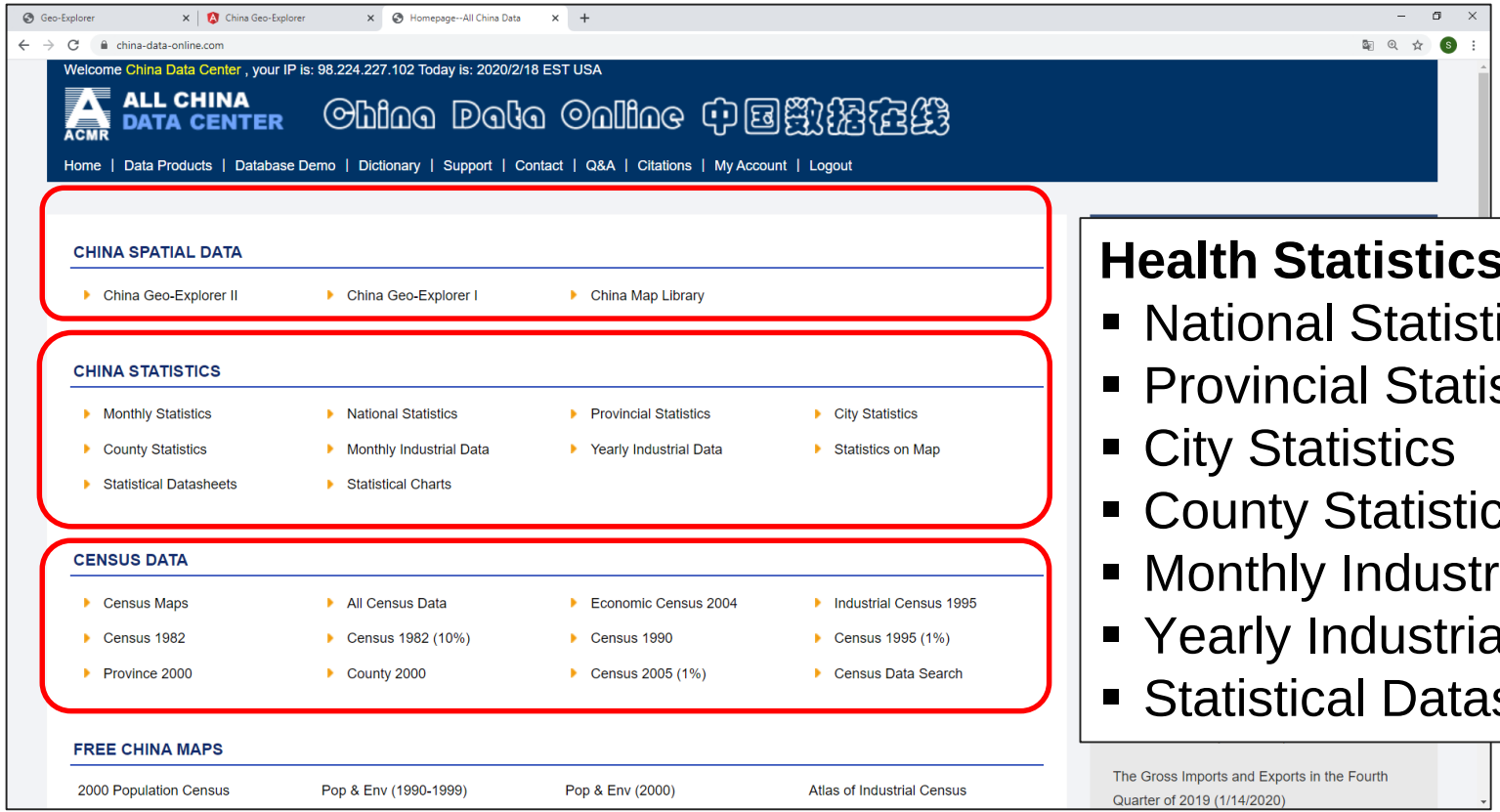
Population Changes by County: 2000 - 2010





中国数据在线提供的年度卫生统计数据

http://china-data-online.com



Health Statistics

- National Statistics
- Provincial Statistics
- City Statistics
- County Statistics
- Monthly Industrial Data
- Yearly Industrial Data
- Statistical Datasheets

中国空间信息系统提供的卫生数据China Geo-Explorer

https://china-data-online.com

Statistics

Census

GIS

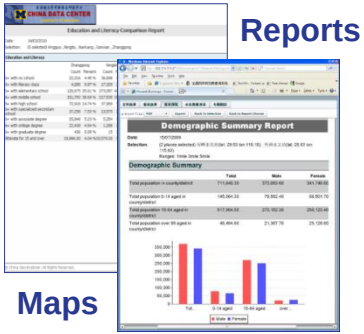
Data

Output

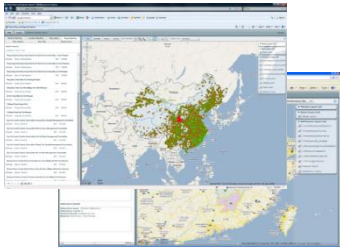
Charts

Tables

Reports



Maps



年度卫生统计Yearly Health Statistics

Data Source: https://china-data-online.com

NUMBER OF HEALTH INSTITUIONS

Year	Total (unit)	Hospitals (unit)	At and AboveCounty Level(unit)	Sanatoriums(unit)	Clinics(unit)	Preven-tion & treatment Centers & Stations(unit)	Sanitation and Antiepidemic Institutions(unit)	Maternityand Child Care Centers(unit)	Chemical Reagent Test Labs(unit)	Institutes ofMedical Science(unit)	Other Institutions(unit)
1949	3,670	2,600	2,600	30	769	11		9	1	3	247
1950	8,915	2,880	2,880	60	3,356	30	61	426	2	3	2,174
1951	16,181	3,150	3,150	120	8,934						
1952	38,987	3,540	3,540	270	29,050						
1953	52,038	3,580	3,580	520	38,987						
1954	56,610	3,658	3,658	678	42,840						
1955	67,725	3,740	3,740	822	51,600						
1956	107,305	3,903	3,903	799	86,866						
1957	122,954	4,179	4,179	835	102,262						
1958	196,829	48,580	4,949	695	132,894						
1959	231,958	35,535	5,730	910	186,039						
1960	261,195	32,333	6,180	1,577	213,823						
1961	269,197	38,611	6,498	1,361	217,568						
1962	217,985	34,379	5,300	1,266	172,708						
1963	215,491	32,706	5,242	1,116	170,717						
1964	215,474	36,744	5,355	1,027	167,715						
1965	224,266	42,711	5,445	887	170,430						
1966	206,613	42,156	5,588	818	153,730						
1967	196,455	52,055	5,713	734	134,725						
1968	171,494	57,041	5,837	473	108,090						
1969	153,891	57,988	5,839	359	90,744						
1970	149,823	64,822	6,030	359	79,600						
1971	131,367	62,766	6,660	183	62,457						
1972	135,127	63,050	6,974	183	66,067						
1973	143,733	64,583	7,361	238	72,117						
1974	149,965	65,258	7,570	252	76,988						
1975	151,733	62,425	7,757	297	80,739						
1976	157,959	63,184	7,952	317	85,616						
1977	164,199	63,952	8,550	342	90,285						
1978	169,732	64,311	8,841	389	94,395						
1979	176,793	65,009	9,254	440	99,643						
1980	180,553	65,315	9,478	470	102,474						

HOSPITAL BEDS AND MEDICAL TECHNICAL PERSONNEL BY CITY AND COUNTY AREAS

Year	Beds		Persons					
	City(10000 units)	County(10000 units)	City(10000 persons)	Doctors City(10000 persons)	Senior and Junior Nurses City(10000 persons)	County(10000 persons)	Doctors County(10000 persons)	Senior and Junior Nurses County(10000 persons)
1949	6	2	17.7			32.8		
1952	12.1	3.9	22.5	8.1	4.3	46.5	34.3	1.8
1957	22.1	7.4	38.2	13.8	10	65.7	40.8	2.8
1962	43.7	25.3	57.1	21.4	15.5	84.3	47.4	4.5
1965	45.8	30.8	65.2	26.9	17.6	88	49.4	5.9
1970	51	59.5	59.6	24.1	18	85.7	46.1	11.6
1975	63.7	96.1	95.7	36.7	24	110	51	14
1978	71.6	114	114.2	44.2	25.7	132.1	59.1	14.9
1980	90.33	128.11	131.3	52.7	30	148.5	62.6	16.6
1981			143.5	58.6	33.4	157.6	65.8	19.1
1982			150.9	62.8	35.4	163.4	67.9	21
1983	86.9	124.1	157.4	66.5	37.3	167.9	68.7	22.3
1984			164.2	69.4	39.3	170.2	68.8	22.3
1985	96.21	126.71	167.7	70.9	39.2	173.4	70.4	24.5
1986	103.3	126.4	177.4	74.9	42.9	173.3	69.5	25.2
1987	112.7	127.7	188.2	79.3	46.1	172.6	68.9	25.7
1988	125.5	124.8	202.8	88.6	53.7	169.6	73.2	29.2
1989	133.5	123.3	212.1	95	59.9	168.8	76.8	32.2
1990	138.67	123.74	218.5	97.8	63.4	171.3	78.5	34.1
1991	144.8	124	226.4	100.3	66.6	172.1	77.7	34.6
1992	152.4	122	236.3	104.3	69.5	171.1	76.5	34.5
1993	159.6	119.9	243.3	107.7	71.5	168.5	75.5	34.1
1994	170.7	112.4	258.9	115	76.2	161	73.2	33.2
1995	173.96	109.65	265.9	118.4	79	159.8	73.4	33.5

年度统计报表Yearly Statistical Datasheets

Data Source: https://china-data-online.com

医疗设备制造Manufacture of Medical Machinery

Data Source: https://china-data-online.com

医疗诊断、监护及治疗设备制造	Medical diagnosis, care and treatment equipment manufacturing
口腔科用设备及器具制造	Dental equipment and apparatus used manufacturing
实验室及医用消毒设备和器具的制	Laboratory and medical equipment and apparatus disinfection system
医疗、外科及兽医用器械制造	Medical, surgical and veterinary equipment manufacturing
机械治疗及病房护理设备制造	Treatment and Nursing mechanical equipment manufacturing
假肢、人工器官及植（介）入器械	artificial organs and plantations (referred) to enter Devices
其他医疗设备及器械制造	Other medical equipment and device manufacturing

	Baoshan	Changning	Changshu	Chongming	Fengxian	Hongkou	Huangpu	Jiading	Jingan	Kunshan	Luwan	Minxing	Nanhui
2008 Daily and medical rubber products manufacturing	4	2	5	0	3	2	0	14	0	4	0	4	4
2008 Medical diagnosis, care and treatment equipment manufacturing	8	0	2	4	9	5	0	12	2	4	2	8	10
2008 Dental equipment and apparatus used manufacturing	1	0	1	2	3	1	0	1	0	2	0	4	4
2008 Laboratory and medical equipment and apparatus disinfection system	6	1	1	1	3	1	0	2	0	2	0	3	2
2008 Medical, surgical and veterinary equipment manufacturing	10	2	6	0	6	3	2	13	0	8	0	8	12
2008 Treatment and Nursing mechanical equipment manufacturing	0	2	0	0	3	2	0	1	0	1	0	3	1
2008 artificial organs and plantations (referred) to enter Devices	3	5	1	0	2	4	0	0	7	0	1	8	2
2008 Other medical equipment and device manufacturing	11	1	9	5	11	4	0	14	0	6	1	16	7

医药制造Manufacture of Medicines

Data Source: https://china-data-online.com

化学药品原药制造	The original drug manufacturing chemicals
化学药品制剂制造	Chemical agent production
中药饮片加工	Pieces of Traditional Chinese medicine processing
中成药制造	Traditional Chinese Prepared Medicines
兽用药品制造	Veterinary medicine manufacturing
生物、生化制品的制造	Biological, chemical and biological products manufacturing
卫生材料及医药用品制造	Sanitation Materials and Medical Articles

	Baoshan	Changning	Changshu	Chongming	Fengxian	Hongkou	Huangpu	Jiading	Jingan	Kunshan
2008 The original drug manufacturing chemicals	5	0	12	0	5	1	1	13	0	20
2008 Chemical agent production	5	2	2	1	11	0	0	14	0	9
2008 Pieces of Traditional Chinese medicine processing	1	0	0	1	1	1	1	4	0	0
2008 Traditional Chinese Prepared Medicines	2	0	2	2	3	0	1	5	1	0
2008 Veterinary medicine manufacturing	4	0	1	0	3	0	0	4	0	0
2008 Biological, chemical and biological products manufacturing	9	1	2	0	17	1	1	3	0	9
2008 Sanitation Materials and Medical Articles	15	2	6	4	12	0	0	5	1	13

卫生服务Health Care

Data Source: https://china-data-online.com

综合医院	General Hospital
中医医院	Traditional Chinese medicine hospital
中西医结合医院	Combined Traditional Chinese and Western Medicine Hospital
民族医院	National Minority Hospital
专科医院	Specialist Hospital
疗养院	Nursing Homes
卫生院及社区医疗活动	Health Centers and Community Medical Treatment Activities
门诊部医疗活动	Clinics Medical Treatment Activities
计划生育技术服务活动	Family planning service
妇幼保健活动	Maternal and child health service
专科疾病防治活动	Specialist service for Disease Control and Prevention
疾病预防控制及防疫活动	Vaccination for disease prevention and control service
其他卫生活动	Other health services
社会保障业	Social Security
干部休养所	Cadres sanatorium
收养收容服务	Adoption of asylum services
不提供住宿的社会福利	No Lodging Social Welfare

Date: 14/10/2016

Selection: (24 selected) Baoshan , Changning , Changshu , Chongming , Fengxian , Hongkou , Huangpu , Jiading

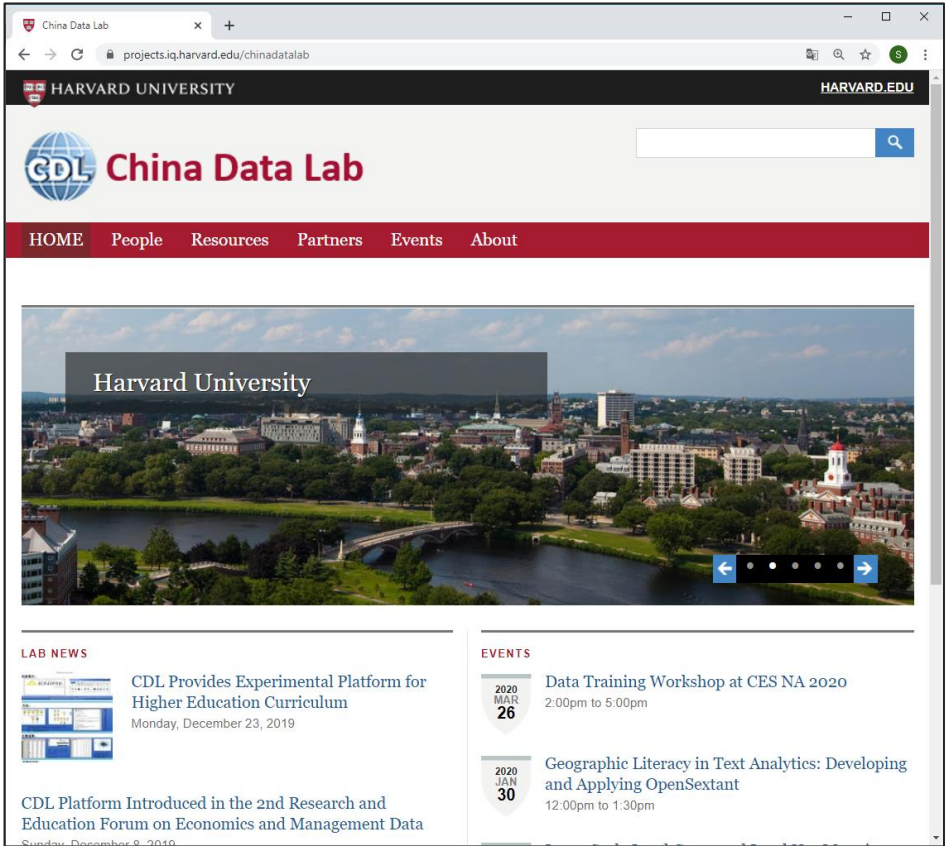
	Baoshan	Changning	Changshu
2008 General Hospital	14	12	8
2008 Traditional Chinese medicine hospital	1	2	1
2008 Combined Traditional Chinese and Western Medicine Hospital	0	1	0
2008 National Minority Hospital	0	0	0
2008 Specialist Hospital	5	17	11
2008 Nursing Homes	2	5	1
2008 Health Centers and Community Medical Treatment Activities	18	7	27
2008 Clinics Medical Treatment Activities	22	31	22
2008 Family planning service	2	3	8
2008 Maternal and child health service	2	2	1
2008 Specialist service for Disease Control and Prevention	3	3	0
2008 Vaccination for disease prevention and control service	1	6	4
2008 Other health services	6	5	10

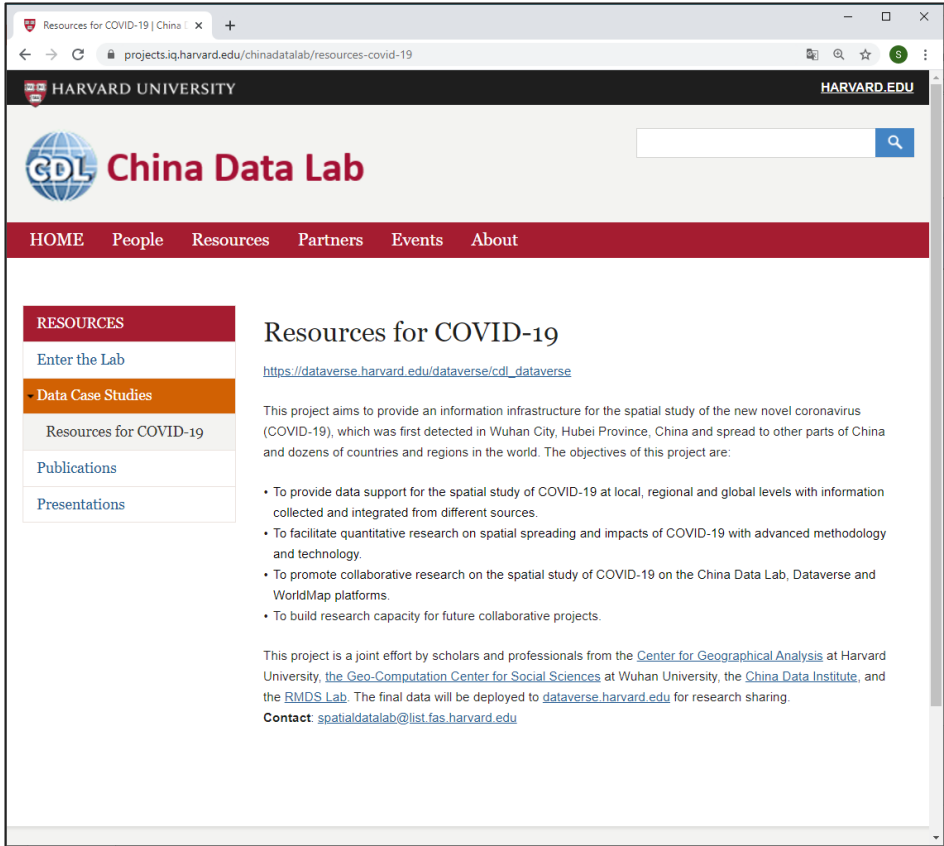
预期产品: The List of Some Data Products From this Project

- Daily reports on virus by city
- Daily reports on virus by province
- Daily reports on virus by country
- City GIS Maps with Daily Virus Data
- Province GIS Maps with Daily Virus Data
- Country GIS maps with daily virus data
- Workflow data analysis with virus data
- Workflow data analysis with social media data
- Matrix tables with daily city to city floating population
- Matrix tables with daily province to province floating population
- County GIS maps with hospital data of China
- City GIS maps with hospital data of China
- Province GIS maps with hospital data of China
- Policies, regulations and changes in leadership

数据发布（1）：资源中心COVID-19

http://chinadatalab.net





数据发布（2）：数据下载dataverse.harvard.edu

http://chinadatalab.net

The Dataverse® Project

Open source research data repository software

Researchers

Enjoy full control over your data. Receive *web visibility, academic credit,* and *increased citation counts*. A personal dataverse is easy to set up, allows you to display your data on your personal website, can be branded uniquely as your research program, makes your data more discoverable to the research community, and satisfies data management plans. Want to set up your personal dataverse?

Journals

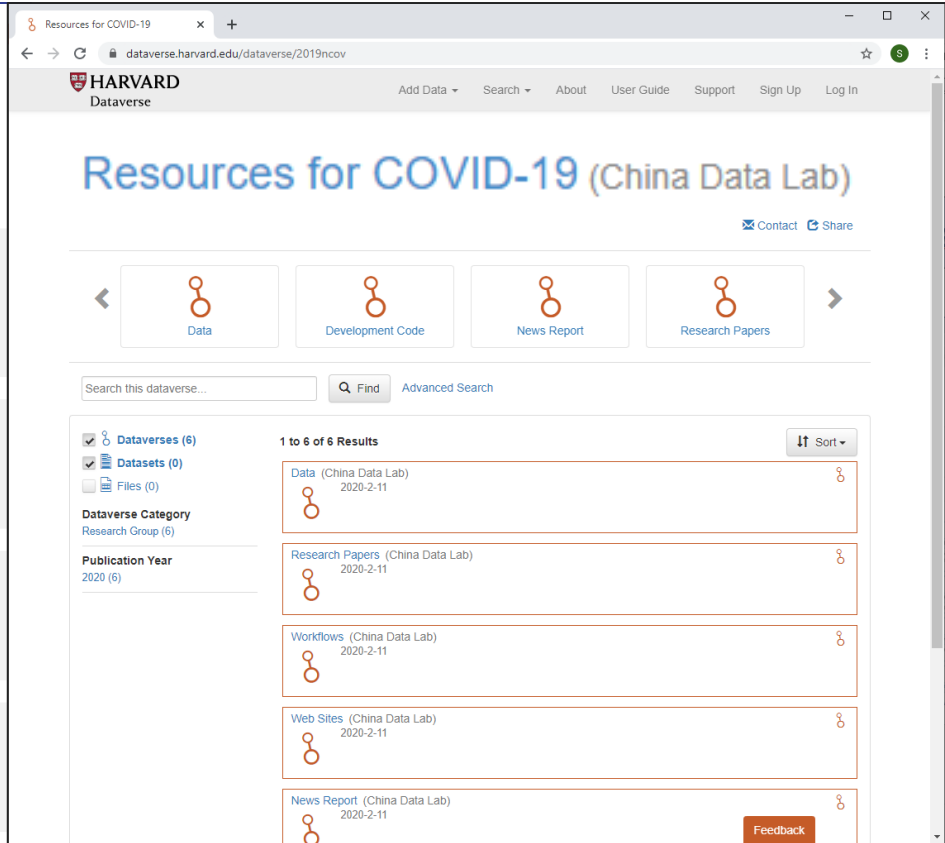
Seamlessly manage the submission, review, and publication of data associated with published articles. Establish an *unbreakable link* between *articles in your journal* and *associated data*. Participate in the open data movement by using Dataverse as part of your journal data policy or list of repository recommendations. Want to find out more about journal dataverses?

Institutions

Establish a research data management solution for your community. Federate with a growing list of Dataverse repositories worldwide for increased discoverability of your community's data. Participate in the drive to set norms for sharing, preserving, citing, exploring, and analyzing research data. Want to install a Dataverse repository?

Developers

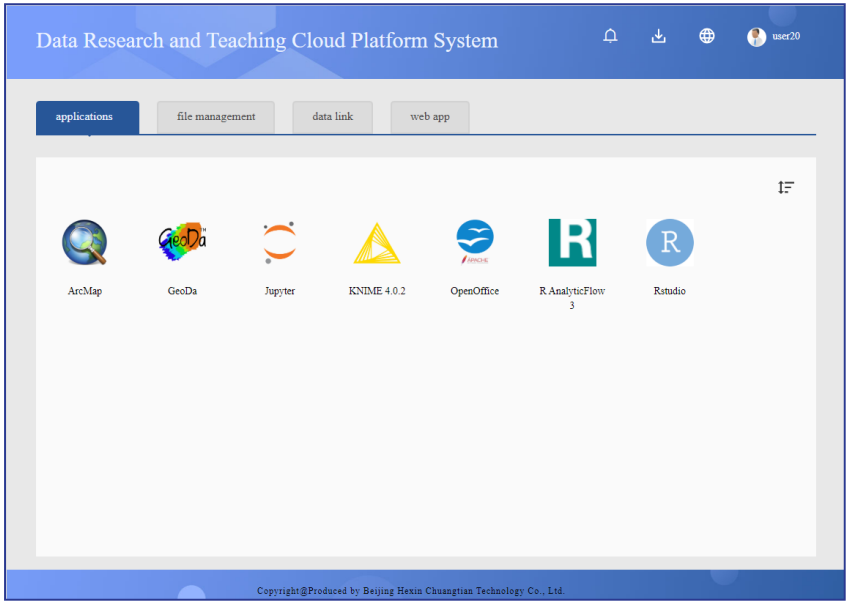
Participate in a vibrant and growing community that is helping to drive the norms for sharing, preserving, citing, exploring, and analyzing research data. Contribute code extensions, documentation, testing, and/or standards. *Integrate research analysis, visualization* and *exploration tools*, or other research and data archival systems with Dataverse. Want to contribute?



数据发布（3）：可执行工作流云平台CDL Cloud

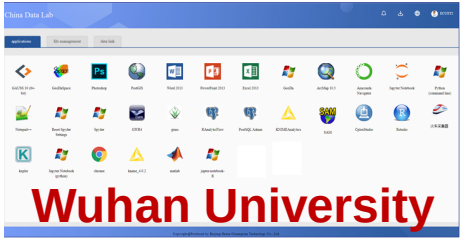
http://chinadatalab.net

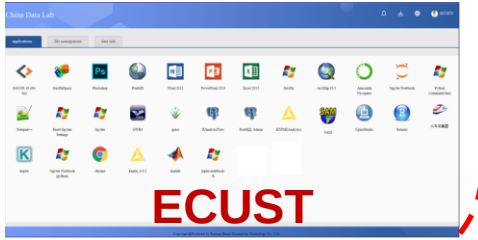
CDL in Harvard



http://harvard.chinadatalab.org

CDL in China



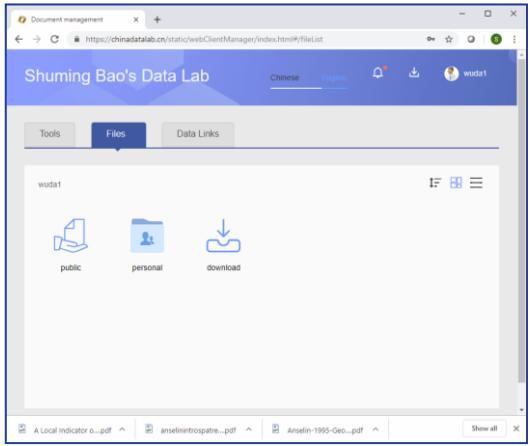


http://chinadatalab.org

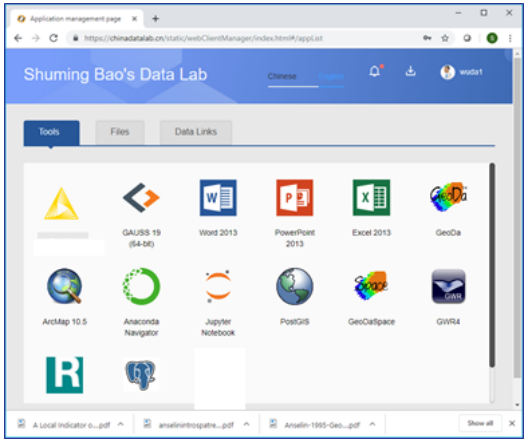
云平台主要特性CDL Cloud Platform Features

- ❑ 云端数据 Data available only on the cloud (users can upload own data)
- ❑ 云端工具 Tools available on the cloud
- ❑ 云端计算 All computation are on the cloud (results can be downloadable)
- ❑ 云端维护 No maintenance required for end users

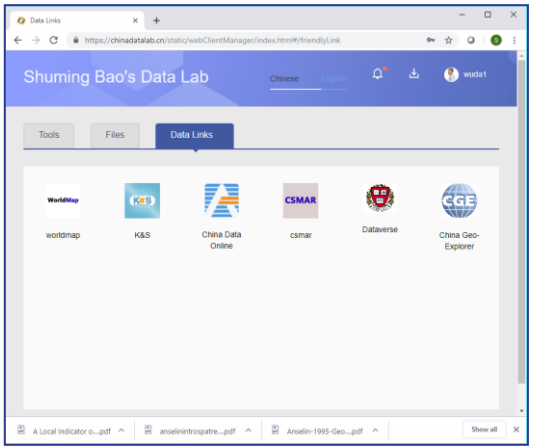
Personal & Shared Data



Tools



External Data Links



云平台主要工具Tools on CDL Cloud

❑ Office tools

Word 2013 | PowerPoint 2013 | Excel 2013 | Photoshop | Notepad++

❑ Interactive tools

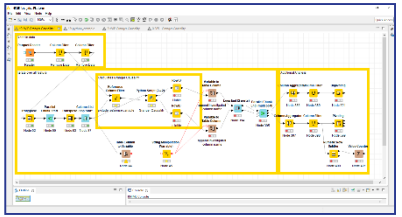
GWR4 | GeoDa | ArcMap 10.5 | ENVI 5.3 + IDL 8.5 | grass

❑ Programming tools

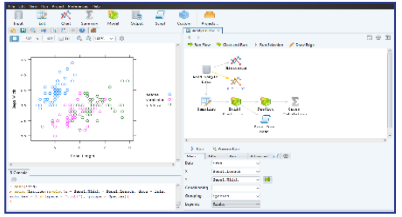
Rstudio | Anaconda Navigator | GAUSS 19 | Spyder | PySAL

❑ Workflow tools

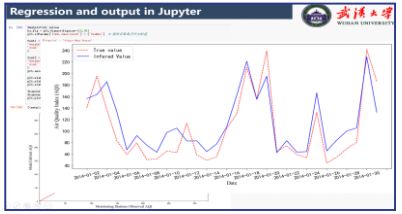
Open for Innovation KNIME



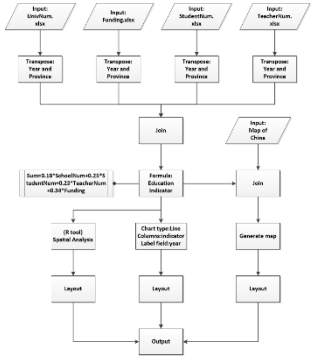
AnalyticFlow

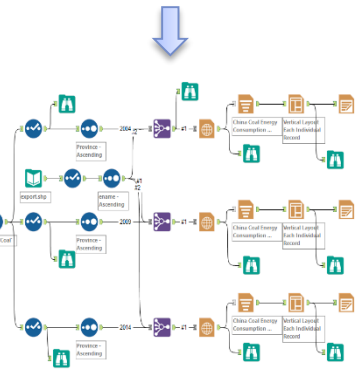


Jupyter Notebook

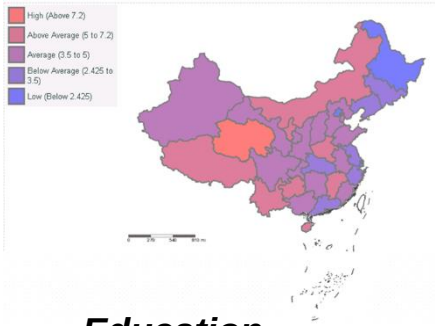


美国自然科学基金会：可复制、可重复、可扩展研究
Reproducible, Replicable, Generalizable Research

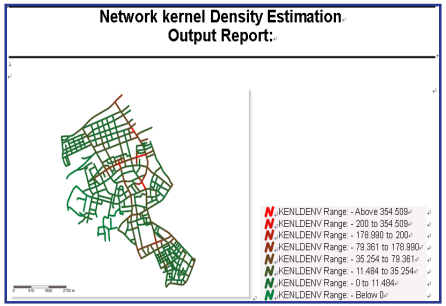




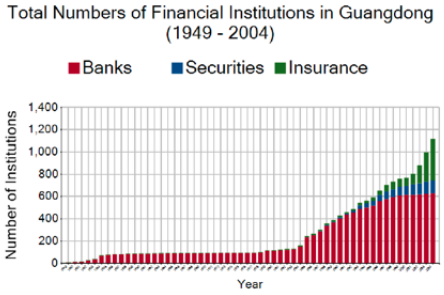
Environment



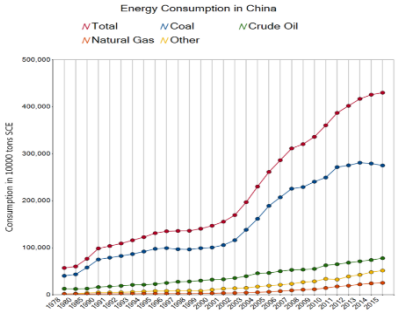
Education



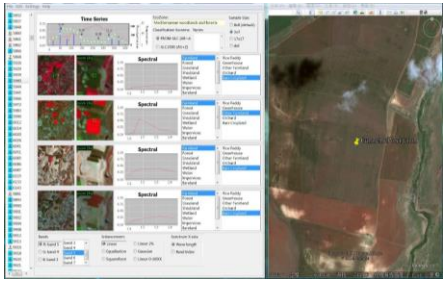
Transportation



Economics



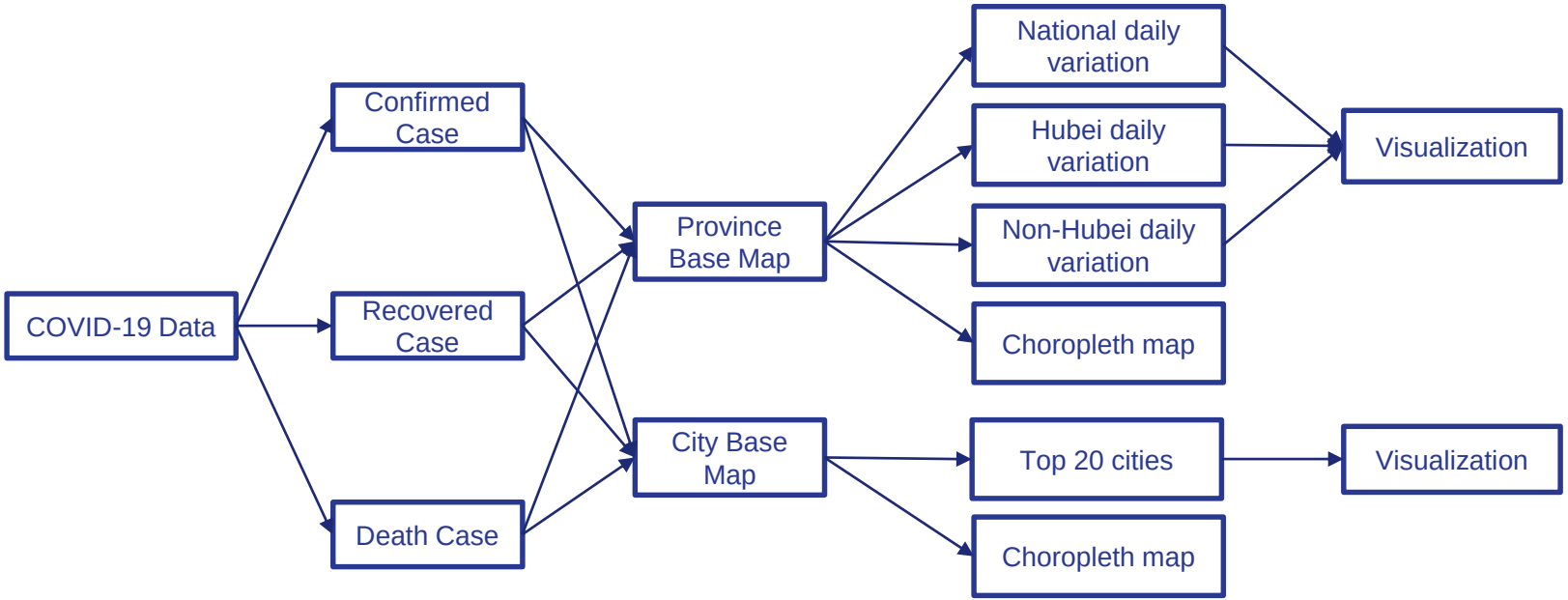
Energy



Land Use

疫情数据集成、分析与可视化流程框图

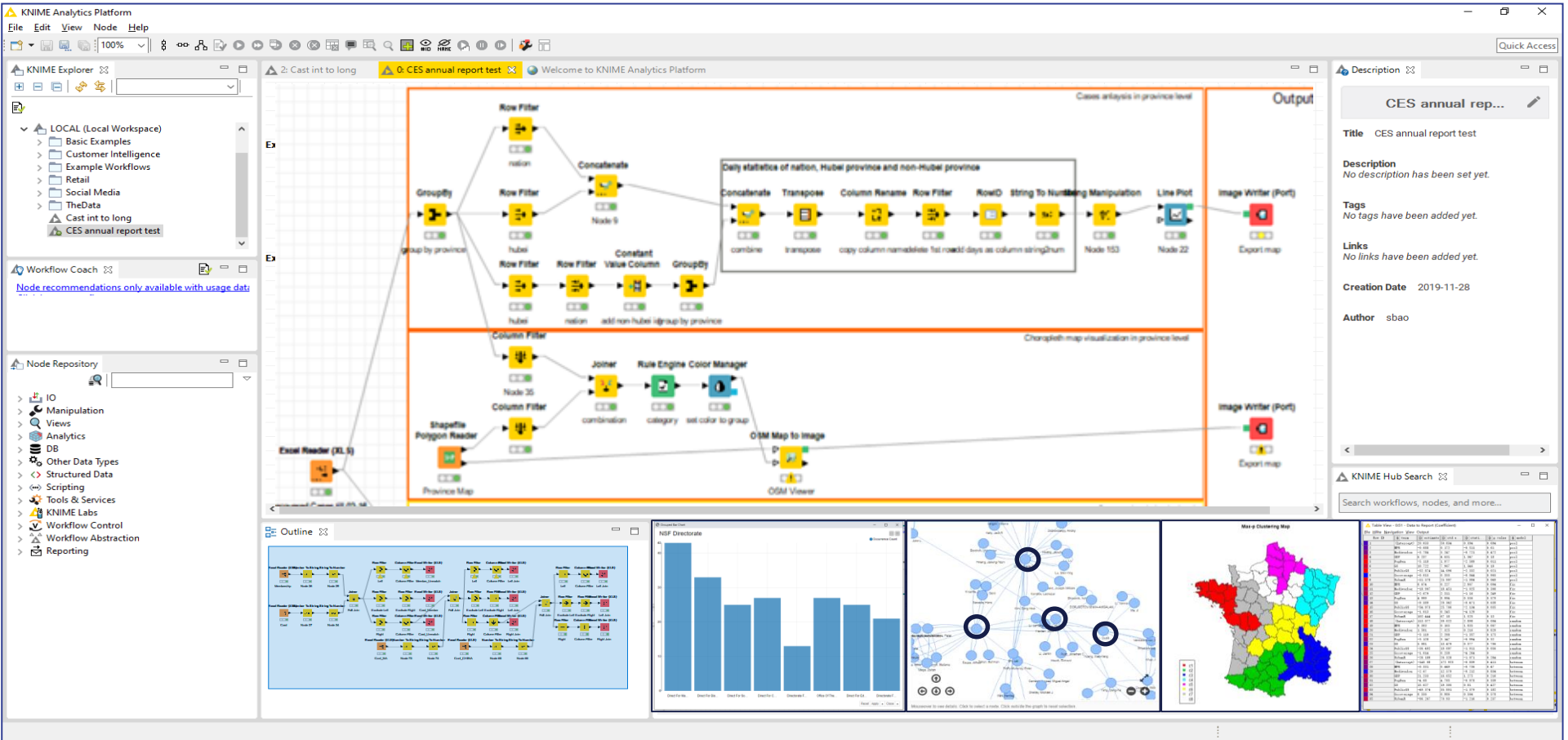
Flowcharts for the Integration, Analysis and Visualization of Virus Data



基于工作流的数据处理与分析

Open for Innovation
KNIME

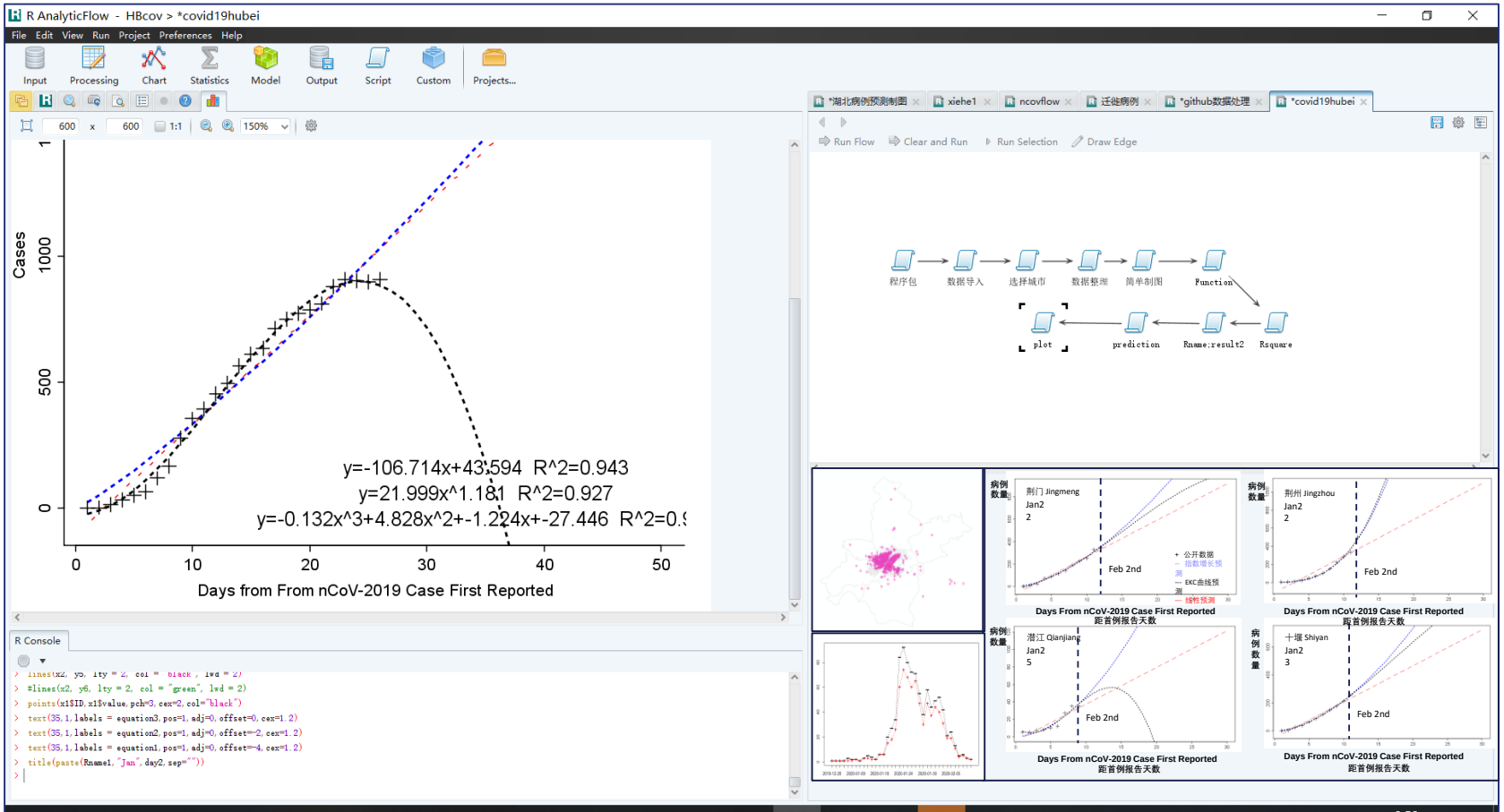
Tool source: https://www.knime.com/



基于R AnalyticFlow的疫情拟合与预测工作流

Tool source: https://r.analyticflow.com/en

AnalyticFlow



从DataVerse数据平台调用执行工作流

Tool source: https://www.knime.com/

Open for Innovation KNIME

Workflows for download on dataverse.harvard.edu

HARVARD Dataverse — Add Data ▾ | Search ▾ | About | User Guide | Support | China Data Lab 2 ▾

Harvard Dataverse > China Data Lab Dataverse > Resources for COVID-19 > Workflows > **COVID19 Stats Anlaysis**

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COVID19 Stats Anlaysis

Draft | Unpublished

Tao Hu, 2020, "COVID19 Stats Anlaysis", https://doi.org/10.7910/DVN/FWOPW2, Harvard Dataverse, DRAFT VERSION

Cite Dataset ▾ — Learn about Data Citation Standards.

Dataset Metrics
0 Downloads

Description	This dataset saves workflows related to the COVID-19 statistics anlaysis. (2020-02-20)
Subject	Medicine, Health and Life Sciences; Computer and Information Science; Social Sciences
Keyword	workflow, statistics, map

Files | Metadata | Terms | Versions

Search this dataset... | Find | + Upload Files | Sort ▾

Filter by: File Type: All ▾ Access: All ▾

1 to 3 of 3 Files | Edit Files ▾ | Download

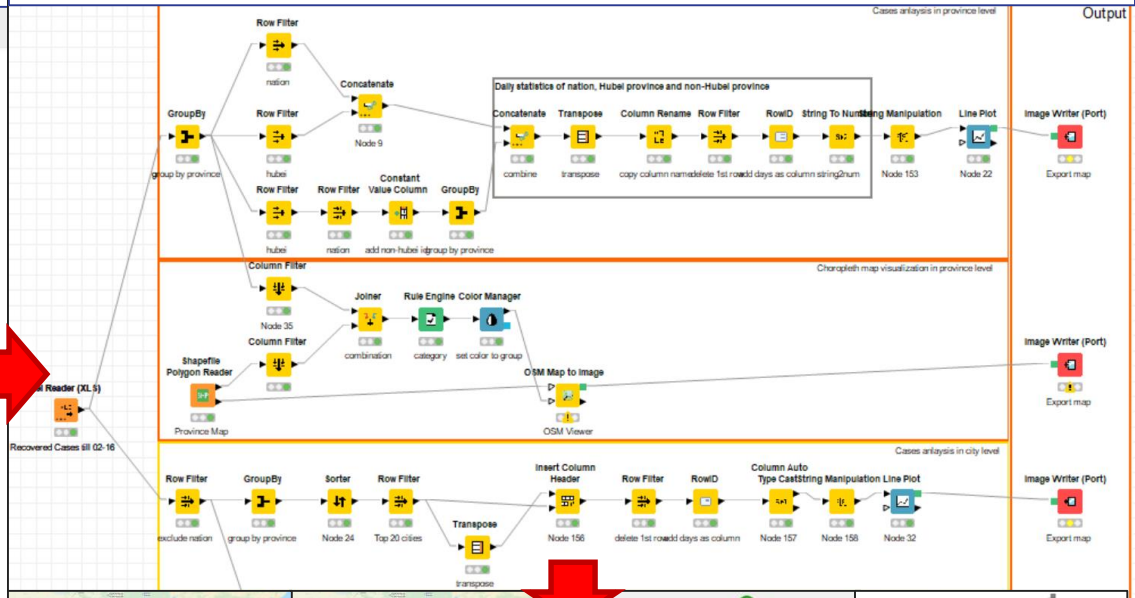
covid19_stats_confirmed.knwf
Unknown - 98.8 KB - 2020-2-20 - 0 Downloads
MD5: 301780709c59bec212ec9de6cb7522cd
Copy and paste the following link to the executable workflow on your "veappc://88D2AA413AED9040FAE30B4D4FBE0916B56E161735A — Download

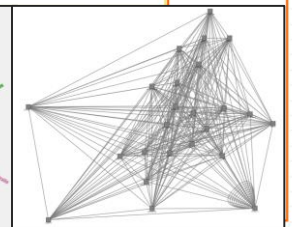
covid19_stats_death.knwf
Unknown - 99.7 KB - 2020-2-20 - 0 Downloads
MD5: 4b55d67e49361f8952ae1d4e0c2f6885
This workflow demonstrates the analysis of death cases in province
veappc://88D2AA413AED9040FAE30B4D4FBE0916B56E161735A7 — Download

covid19_stats_recovered.knwf
Unknown - 98.2 KB - 2020-2-20 - 0 Downloads
MD5: cfb5e9f1ff29c9aa0a01f7f51174409 8
This workflow demonstrates the anlaysis of recovered cases in provi
veappc://88D2AA413AED9040FAE30B4D4FBE0916B56E161735A7 — Download

Feedback

Executable workflows on harvard.chinadatalab.org





“The Resources for Novel Coronavirus and Global Research”
“新冠病毒资源与全球研究”项目

中国数据研究所联合哈佛大学、芝加哥大学、武汉大学等知名高校学者以及百智享、和信创天、华通人等知名企业共同开展新型肺炎疫情研究，实现产学研合作，协同在线研究。

- **Resource support数据支持**
  - Data
  - Tools
  - Cloud computation
- **Training培训**
  - Data
  - Technology
  - Methodology
  - Applications
- **Distribution发布**
  - Research data
  - Papers and reports
  - Workflows
- **Workshop and symposium讲座与研讨会**

“The Resources for Novel Coronavirus and Global Research”
“新冠病毒数据资源与全球研究”项目申请

申请书下载： http://chinadatalab.net or
https://projects.iq.harvard.edu/chinadatalab/resources-covid-19

研究议题（建议但不限于）：

- 基于大数据的疫情监测、预警与风险评估
- 新冠病毒疫情传播扩散时空变化模式研究
- 新冠病毒疫情对中国与全球贸易与投资影响研究
- 新冠病毒疫情对地区与全球产业供应链影响研究
- 新冠病毒疫情中舆情变化与公众行为规律研究
- 新冠病毒疫情的时空动态与季节气候环境关系研究

联系地址：office@chinadatacenter.net

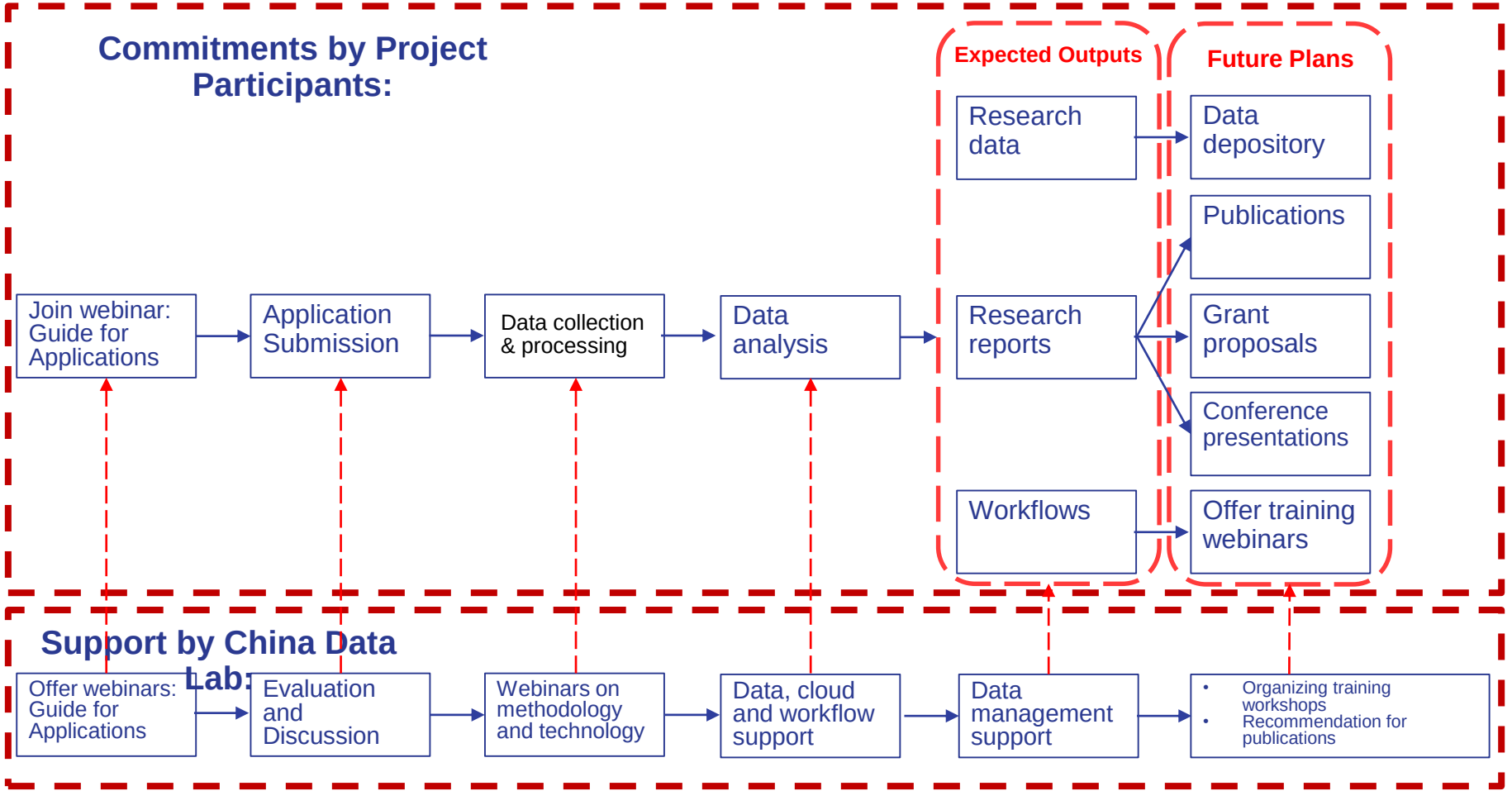
申请提交截止日期：2020年3月15日

说明：国际合作项目优先考虑。

Objectives 项目目标

- 培育先期研究 To develop some pilot studies on COVID-19 for future research
- 专业数据分析 To cultivate professional data analysis
- 新方法与技术探索 To explore new methodology and technology for COVID-19 data analysis
- 鼓励可复制、可重复、可扩展研究 To encourage replicable, reproducible and expandable research
- 鼓励知识与信息共享 To promote knowledge and information sharing
- 促进国际合作 To promote international research collaborations
- 促进教研数据应用 To promote data applications in research and education
- 团队能力建设To build the capacity for future collaborations

项目流程Project Workflows: Commitments and Support



Qs & As 问题与回答

Q: Where we can find the data for the project?

A: Most aggregated data can be found from dataVerse at Harvard for public access. Some microdata and basic data will be located on the cloud with restricted access.

Q: Where will be the data depository for the final research data and reports?

A: We'll use dataVerse at Harvard primarily for data depository, which is free and have a connection with the online map viewer (WorldMap) and our cloud platform.

Q: What are the criteria for evaluating our applications?

All applications will be reviewed by the review committee with some leading scholars and professionals from Harvard, Wuhan Uni, Peking Uni, RMDS and China Data Institute. For those pilot projects, we hope that this project will help those participants to shape and build their research ideas from the project for other grant applications, and also learn new methodology and technology for future development. Thus, we'll pay more attention on the applicants' learning ability, active participation, and desire to collaborate with others.

Q: What support can those participants receive?

A: Each participants will receive a package of various support during the whole process, including webinars for project application, training webinars for data, methodology and technology, research data we can offer, cloud platform account, depository support for research data and reports, opportunity for offering training workshops, and recommendations for publications.

The Cloud Platform for Global Research on Novel Coronavirus

Participants 项目支持单位

Geocomputation Center for Social Sciences, Wuhan University
武汉大学社会地理计算中心

Center for Geographical Analysis, Harvard University
哈佛大学空间分析中心

RMDS Lab 研究方法与数据科学实验室

China Data Institute 中国数据研究所

MicroSoft China 微软中国

Vesystem Inc.和信创天科技有限公司

Knowledge Sharing Inc.百智享科技有限公司

All China Marketing Research Inc. 华通人市场研究有限公司

如何参与How Can You Be Involved?

- ❑贡献数据Make contributions to data collections
- ❑参与研究Join research teams
- ❑分享成果Share your research results
- ❑参与培训Offer training webinars
- ❑参加讲座Participate in workshops
- ❑其他建议Other suggestions?

For more information, contact: office@chinadatacenter.net

网站与联系方式Websites and Contacts

中国数据实验室China Data Lab

http://chinadatalab.net

or

https://projects.iq.harvard.edu/chinadatalab

中国数据在线China Data Online

http://china-data-online.com

联系方式Contacts

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哈佛大学空间卫生会议预告

Upcoming Conference on Spatial Health at Harvard

2020 CGA CONFERENCE:

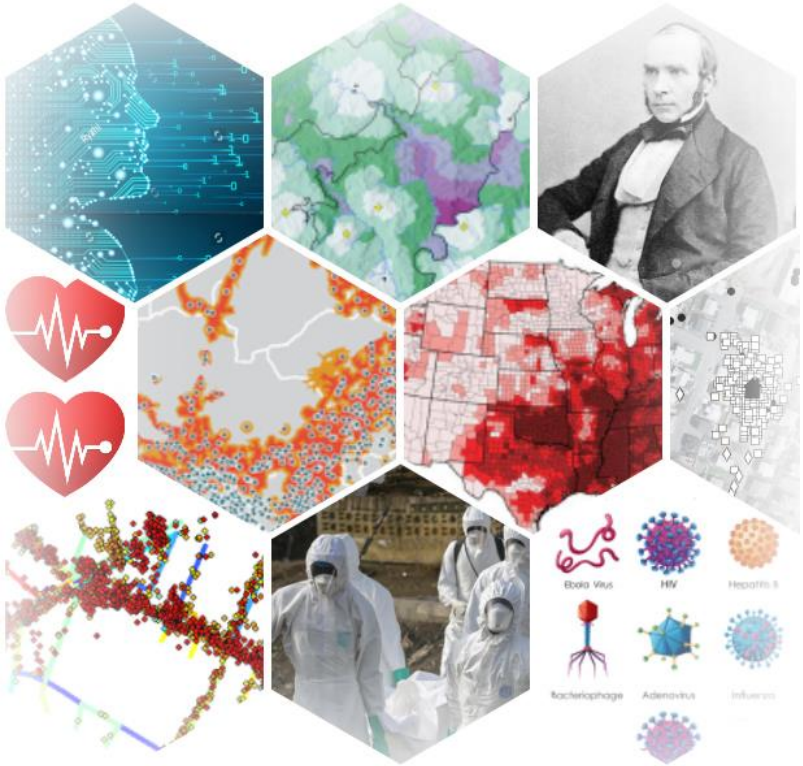
From Geospatial Research to Health Solutions

Date: Apr 30th - May 1st, 2020

Location: 1730 Cambridge Street, Concourse Level, Cambridge, MA 02138

This event is free and open to the public.

Speakers are by invitation only.

Posters and participants are welcome.

To register: https://gis.harvard.edu/event/2020-cga-conference-spatial-health-tentative