

Supplemental Material

A machine learning based forecast model for the COVID-19 pandemic and investigation of the impact of government intervention on COVID-19 transmission in China

Xingcheng Lu ^a, Dehao Yuan ^b, Wanying Chen ^a, Jimmy C.H. Fung ^{a,b,*}

^a Division of Environment and Sustainability, The Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong, China

^b Department of Mathematics, The Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong, China

Correspondence to Jimmy C.H. Fung (Email: majfung@ust.hk; Tele: +852-2358-5959)

4 pages, 1 table.

Table S1: The 100 cities that used for the analysis in this work.

No.	City	Province	Cross-city migration index ^a	Within-city travel index ^a	Confirmed cases ^b
1	Anqing	Anhui	0.36	3.92	83
2	Anyang	Henan	0.36	2.16	53
3	Beihai	Guangxi	0.20	2.70	44
4	Beijing	Beijing	3.21	2.05	422
5	Bengbu	Anhui	0.34	2.92	160
6	Bozhou	Anhui	0.50	4.43	108
7	Cangsha	Hunan	2.26	2.25	242
8	Cangzhou	Hebei	0.49	2.39	48
9	Changchun	Jilin	0.95	2.91	45
10	Changde	Hunan	0.45	3.38	82
11	Changzhou	Jiangsu	0.89	2.60	51
12	Chengdu	Sichuan	3.79	2.25	144
13	Chongqing	Chongqing	2.02	2.53	576
14	Dazhou	Sichuan	0.49	3.65	42
15	Dongguan	Guangdong	3.83	1.52	99
16	Enshi	Hubei	0.17	2.64	252
17	Ezhou	Hubei	0.08	1.24	1394
18	Foshan	Guangdong	2.76	1.87	84
19	Fuyang	Anhui	0.65	3.54	155
20	Fuzhou	Jiangxi	0.26	3.54	72
21	Fuzhou	Fujian	0.77	2.23	72
22	Ganzhou	Jiangxi	0.47	3.19	76
23	Ganzizhou	Sichuan	0.07	2.20	78
24	Guangzhou	Guangdong	4.41	1.68	347
25	Haerbin	Heilongjiang	0.70	1.83	198
26	Hangzhou	Zhejiang	2.14	2.15	169
27	Hefei	Anhui	1.43	2.19	174
28	Hengyang	Hunan	0.63	4.14	48
29	Huaiain	Jiangsu	0.51	3.22	66
30	Huaihua	Hunan	0.39	3.46	40
31	Huanggang	Hubei	0.25	2.09	2907
32	Huangshi	Hubei	0.11	1.61	1015
33	Huizhou	Guangdong	1.48	1.84	62
34	Jiaxing	Zhejiang	0.83	2.44	45
35	Jinan	Shandong	1.09	2.75	47
36	Jingmen	Hubei	0.13	1.92	928
37	Jingzhou	Hubei	0.24	1.94	1580
38	Jinhua	Zhejiang	1.01	2.06	55
39	Jining	Shandong	0.52	2.63	260
40	Jiujiang	Jiangxi	0.31	2.87	118

41	Jixi	Heilongjiang	0.05	1.89	46
42	Kunming	Yunnan	1.83	2.31	53
43	Lianyungang	Jiangsu	0.39	2.77	48
44	Linyi	Shandong	0.66	2.72	49
45	Liuan	Anhui	0.50	3.73	69
46	Loudi	Hunan	0.42	3.51	76
47	Nanchan	Jiangxi	0.67	1.92	230
48	Nanjing	Jiangsu	1.59	2.37	93
49	Nanning	Guangxi	1.27	2.52	55
50	Nantong	Jiangsu	0.71	3.38	40
51	Nanyang	Henan	0.41	2.47	156
52	Ningbo	Zhejiang	1.34	2.48	157
53	Pingdingshan	Henan	0.33	2.66	58
54	Putian	Fujian	0.25	2.57	56
55	Qianjiang	Hubei	0.06	1.59	198
56	Qingdao	Shandong	1.02	2.69	60
57	Qiqihaer	Heilongjiang	0.22	2.31	43
58	Quanzhou	Fujian	0.92	2.44	47
59	Sanya	Hainan	0.28	2.64	54
60	Shanghai	Shanghai	3.37	2.49	339
61	Shangqiu	Henan	0.65	3.57	91
62	Shangrao	Jiangxi	0.42	3.39	123
63	Shaoxing	Zhejiang	0.71	2.71	42
64	Shaoyang	Hunan	0.55	3.99	102
65	Shenzhen	Guangdong	4.38	1.52	419
66	Shiyan	Hubei	0.10	1.51	672
67	Shuangyashan	Heilongjiang	0.06	2.08	52
68	Suihua	Heilongjiang	0.31	2.28	47
69	Suizhou	Hubei	0.08	1.57	1307
70	Suzhou	Anhui	0.61	3.39	41
71	Suzhou	Jiangsu	2.77	2.54	87
72	Taizhou	Zhejiang	0.56	2.32	146
73	Tangshan	Hebei	0.51	2.90	58
74	Tianmen	Hubei	0.08	2.25	500
75	Weifang	Shandong	0.64	2.58	44
76	Wenzhou	Zhejiang	0.67	1.64	504
77	Wuxi	Jiangsu	1.32	2.77	55
78	Xian	Shaanxi	1.72	1.51	120
79	Xiangyang	Hubei	0.17	1.67	1175
80	Xianning	Hubei	0.10	1.86	868
81	Xiantao	Hubei	0.07	1.64	575
82	Xiaogan	Hubei	0.21	1.75	3518
83	Xinyang	Henan	0.36	2.75	274
84	Xinyu	Jiangxi	0.09	2.13	130

85	Xixiang	Henan	0.42	2.40	57
86	Xuchan	Henan	0.41	2.89	39
87	Xuzhou	Jiangsu	0.76	2.97	79
88	Yantai	Shandong	0.44	2.63	47
89	Yichan	Hubei	0.15	1.71	931
90	Yichun	Jiangxi	0.39	3.03	106
91	Yiyang	Sichuan	0.54	3.61	60
92	Yongzhou	Hunan	0.44	4.08	44
93	Yueyang	Hunan	0.51	2.97	156
94	Zhangjiakou	Hebei	0.29	2.88	41
95	Zhengzhou	Henan	1.83	1.68	157
96	Zhongshan	Guangdong	1.57	1.74	66
97	Zhoukou	Henan	0.75	3.45	76
98	Zhuhai	Guangdong	0.84	2.10	98
99	Zhumadian	Henan	0.46	2.90	139
100	Zhuzhou	Hunan	0.52	2.95	80

^a: The averages of the data from January 23 to March 5 2020.

^b: The total sum by March 5 2020.