1. Title: Saving Lives versus Saving Livelihoods: Can Big Data Technology Solve the Pandemic Dilemma?

2. Authors and affiliations and contact emails
Kairong Xiao, Columbia Business School, kairong.xiao@gsb.columbia.edu

3. Abstract
This paper studies the effectiveness of big data technology in mitigating the economic and health impacts of the COVID-19 outbreak. I exploit the staggered implementation of contact-tracing apps called “health code” in 322 Chinese cities during the COVID-19 pandemic. Using high-frequency variations in population movements and greenhouse emission across cities before and after the introduction of health code, I disentangle the effect of big data technology from confounding factors such as public sentiments and government responses. I find that big data technology significantly improves the tradeoff between human toll and economic costs. Cities adopt health code experience a significant increase in economic activities without suffering from higher infection rates. Overall, big data technology creates an economic value of 0.5%-0.75% of GDP during the COVID-19 outbreak in China.

4. Data description
Adoption dates of health code by cities, daily within-city population movements, greenhouse gas emission, between-city migration flows, COVID-19 cases

5. JEL codes for the project
G00, I00

6. Key words
Big data, Coronavirus

Link to the paper: