Mobility Data: Applications and Challenges

Type: Virtual Paper
Theme:
Sponsor Groups:
Poster #:
Day: 4/9/2021
Start / End Time: 1:30 PM / 2:45 PM (PDT)
Room: Virtual 24
Organizers: Tao Hu, Bing She, Peng Peng, Zhenlong LI
Chairs: Tao Hu

Call for Submissions

Geography and transportation researchers have studied mobility data for decades. Traditional mobility identification methods, such as daily-diary surveys provide detailed spatial and temporal information about activities and trips. However, collecting this kind of data is time-consuming and costly. In the era of big data, the rapid increase in the volume, diversity, and intensity of inexpensive data sources has stimulated new developments in human mobility research. New technologies have given researchers the opportunity to continuously collect high-resolution spatiotemporal data.

Beyond the collection of mobility data, the delivery of information and knowledge derived from these data is also very important. The development of mobility related research not only yields interesting findings but also provides many chances in various applications in the domain of public health, urban planning, economic development, and tourism. For example, in the context of the COVID-19 pandemic, community mobility reports published by Google Apple, Safegraph, and Descartes Lab have been used to help research and decision making. The session encourages a meaningful engagement with the ideas and issues in using human mobility data within its related studies. Topics of interest in this session include, but are not limited to:
-Resources of mobility data
-Comparative studies on different mobility data sources
-New methodologies for identifying human mobility
-Mobility related big data processing
-Mobility data management
-Racial/ethnic and gender inequality in human mobility
-Spatiotemporal analysis of mobility data
-Geovisual analytics of mobility data
-Service area delineation with human mobility data
-Forecasting traffic-related phenomenon
-Measuring the impact of pandemic on human activities
-Privacy preservation of human mobility data

Reference:
1. Kwan, M. P., & Schwanen, T. (2016). Geographies of mobility. Annals of the American Association of Geographers.
2. Cresswell, T., & Merriman, P. (Eds.). (2011). Geographies of mobilities: Practices, spaces, subjects. Ashgate Publishing, Ltd..
3. Giannotti, F., & Pedreschi, D. (Eds.). (2008). Mobility, data mining and privacy: Geographic knowledge discovery. Springer Science & Business Media.
4. Yang, C., Sha, D., Liu, Q., Li, Y., Lan, H., Guan, W. W., ... & Wang, Z. (2020). Taking the pulse of COVID-19: A spatiotemporal perspective. International journal of digital earth, 13(10), 1186-1211.
5. Wang, S., Liu, Y., & Hu, T. (2020). Examining the Change of Human Mobility Adherent to Social Restriction Policies and Its Effect on COVID-19 Cases in Australia. International Journal of Environmental Research and Public Health, 17(21), 7930.
6. Huang, X., Li, Z., Jiang, Y., Li, X., & Porter, D. (2020). Twitter reveals human mobility dynamics during the COVID-19 pandemic. PloS one, 15(11), e0241957.

Description

Agenda

Type	Details	Minutes	Start Time
Presenter	Zhenlong LI*, 90036835 *University of South Carolina*, *Fighting the Pandemic with Big Movement Data: Our Approaches* (/AAG Annual Meeting 2021/abstracts-gallery/51021) (/AAG Annual Meeting 2021/abstracts-gallery/51021)	15	1:30 PM
Presenter	Tao Hu, *Center for Geographic Analysis, Harvard University*, Regina Liu, *Department of Biology, Mercer University*, Scott Blender, *Department of Economics, Temple University*, Kelly Ly, *Department of Computer Science, University of Massachusetts Lowell*, Bing She*, 90104408 *University of Michigan*, *Exploring Human Mobility Patterns during COVID-19 using Social Media and Land Use Data* (/AAG Annual Meeting 2021/abstracts-gallery/50013) (/AAG Annual Meeting 2021/abstracts-gallery/50013)	15	1:45 PM
Presenter	Peng Peng*, *Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences*, Feng Lu, *Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences*, *The Complex Network of Global LNG Maritime Transportation* (/AAG Annual Meeting 2021/abstracts-gallery/50390) (/AAG Annual Meeting 2021/abstracts-gallery/50390)	15	2:00 PM
Presenter	Yunhe Cui, *University of Connecticut*, Tao Hu*, 90102911 *Harvard University*, Zhenlong Li, *University of South Carolina*, Sisi Wang, *University of Queensland*, Bing She, *University of Michigan*, Mengxi Zhang, *Ball State University*, *Mobility Data Applications and Challenges in the COVID-19 Pandemic* (/AAG Annual Meeting 2021/abstracts-gallery/50429) (/AAG Annual Meeting 2021/abstracts-gallery/50429)	15	2:15 PM

Type	Details	Minutes	Start Time
Presenter	Sanghoon JI*, *Kyunghee University*, Jeong C. Seong, *University of West Georgia*, Yubin Lee, *Kyunghee University*, Ana Stanescu, *University of West Georgia*, Chul sue Hwang, *Kyunghee University*, <u>*An Exploratory Spatial Pattern Analysis Using a Traffic Congestion Data-Mining Approach with an Online Map Service*</u> (/AAG Annual Meeting 2021/abstracts-gallery/51349) (/AAG Annual Meeting 2021/abstracts-gallery/51349)	15	2:30 PM

Session Information

Virtual Paper

A virtual 75-minute session for which 5 formal presentation abstracts have been submitted. Session organizers may also opt to have only 4 presentations for which abstracts have been submitted and 1 discussant. Each presenter is expected to adhere to the 15-minute time limit. Paper sessions that do not have 5 presenters, or 4 presenters and a discussant by the session submission deadline may be edited or removed.

Contact the Primary Organizer

Tao - taohu@fas.harvard.edu