

EXPLORING HUMAN- ENVIRONMENT INTERACTIONS FOR SUSTAINABLE CITY DEVELOPMENT: A GEOSPATIAL DATA ANALYTICAL APPROACH

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Abstract

Geospatial big data have created unprecedented opportunities for research on human-environment interactions. In this seminar, I will introduce my work on exploring human-environment interactions at the fine-grained level through the development and application of geospatial big data analytical methods (e.g., space-time statistical analysis, clustering and machine learning). Specifically, I will present three of my research projects on human-environment interactions for sustainable city development using geospatial big data from multiple sources (e.g., GPS trajectories, mobile sensing, remote sensing). First, I will discuss my work on methodologies of geospatial flow data analysis and its implications for mining and understanding urban dynamics. Second, I will discuss the impact of human activities on the environment through exploring activity-related traffic congestion and emissions at the individual level. Third, the impacts of the interactions between human activity and the environment on people's health risks are examined through assessing individual exposure to COVID-19 transmission risk. The findings from these projects could help understand how human activities affect the environment and people's health risks, which could further provide reliable evidence for developing preventive measures and facilitating the development of healthy and sustainable cities. Future research directions on geospatial big data analytics will also be discussed in this seminar.

Speaker bio

Zihan Kan is an Assistant Professor at the Department of Geography and Resource Management, The Chinese University of Hong Kong. Her research addresses the interactions between human activities and the environment by developing innovative geospatial analytical methods. She published extensively on prestigious peer-reviewed journals in the domains of environmental science, health geography, spatial analysis and GIScience, including several highly-cited papers listed by Web of Science. She is also the recipient of many awards such as Hong Kong RGC Postdoctoral Fellowship Award and the Advancing Diversity and Inclusion Award by the American Association of Geographers.

