

# LSGI Talk Series: Emerging Topic in Geospatial and Urban Science

## Active Hope in the Changing World: Geospatial Approaches to Enhancing Disaster and Pandemic Resilience

**Date:** 11 Feb 2022 (Fri)

**Time:** 10:00 - 11:00am

**Venue:** Online @ zoom

**Language:** English

### Bio:

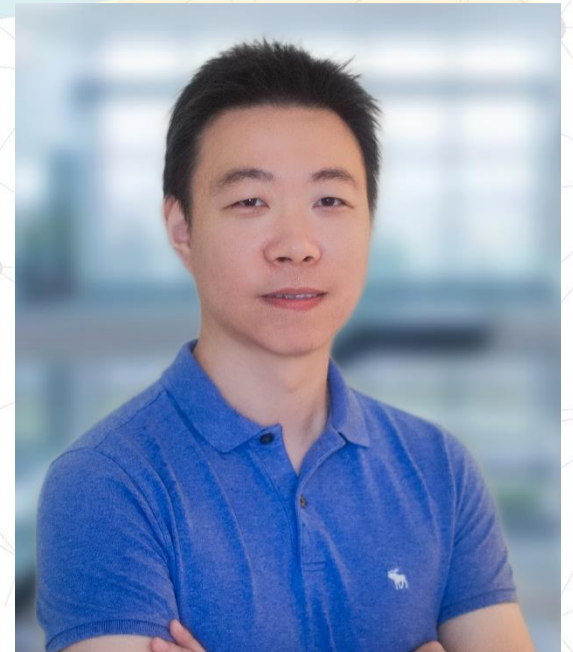
Lei Zou is an Assistant Professor in the Department of Geography at Texas A&M University (TAMU), where he directs the Geospatial Exploration & Resolution (GEAR) Lab. His research focuses on GIScience, social sensing, remote sensing, and their applications in disaster resilience, public health, and human-environment sustainability. Currently, he serves as the PI or Co-PI for several projects funded by NSF, the U.S. Department of Veteran Affairs, and TAMU. In these projects, Lei aims to develop theoretical and intelligent algorithms for big geospatial data analytics, create novel web/smartphone-based GIS applications, measure and improve community resilience to disasters (e.g., hurricanes, flooding, drought, and covid-19), and establish digital twins for simulating future urban and landscape dynamics. Meanwhile, Lei collaborates on projects to understand disaster resilience disparities using social media, simulate population dynamics and wetland losses in coastal regions, and evaluate community resilience in different countries. He has published over 40 peer-reviewed articles in academic journals, conference proceedings, and book chapters. In addition to research, Lei is devoted to academic services. He is the communication director of the AAG-GISS Specialty Group, a research committee member in the UCGIS, a research agenda committee member in the commission on Geospatial Analysis and Modeling of the International Cartographic Association, and a board member of the CPGIS.

### Abstract:

My research aims to build a sustainable future for human communities under the changing environment through spatial thinking, novel data, and intelligent algorithms. Increasingly frequent natural hazards and the ongoing Covid-19 pandemic have caused catastrophic impacts on society. Meanwhile, communities and individuals react differently to various threats, leading to uneven social, health, and environmental consequences. Understanding the implications and feedback between human society, the built environment, and the ecosystem under the changing climate and pandemic is the key to building a sustainable future. With a large, diversified amount of data available and the advances in GIScience, we have more channels and tools to rapidly, precisely, and multi-dimensionally observe and predict the dynamics of human behaviors, urban development, and environmental systems. This talk will introduce my research on leveraging multi-source geospatial big data to analyze human behaviors during disasters and Covid-19 and explore approaches of improving community resilience to disasters and public health crises. The outcomes will shed light on the pros and cons of analyzing geospatial data using different machine learning and deep learning algorithms and provide new perspectives on innovative applications of location-based big data.

**All are welcome. To register, please [click here](#) for the details.**

**For enquiries, please contact Ms Anna Choi at 3400 8158 or [anna.choi@polyu.edu.hk](mailto:anna.choi@polyu.edu.hk)**



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