Exploring the Impacts of Emerging Transportation Technologies Using Machine Learning Assisted Simulation

Seminar summary

Vehicle automation technologies have been advanced significantly in the recent years and the envision travel modes, such as private and shared automated vehicles are positioned to disrupt the existing urban mobility systems. There is an urgent need to understand the possible impact of these emerging transportation services in cites to enable proactive decision making that leverage these new technologies to meet environmental and equity goals. In this seminar, I will present my research on simulating the impacts of private and shared automated vehicles. Specifically, I will focus on how machine learning approaches, such as supervised learning and reinforcement learning, can be incorporated into different aspects of the agent-based simulation to enhance model predictive power, develop more robust surrogate models, as well as designing more efficient vehicle operation strategies. This seminar series is co-organized by Department of Landscape Architecture and Urban Planning, Transportation Institute, and Institute of Data Science at Texas A&M University.

Speaker's information

Dr. Wenwen Zhang is an Assistant Professor in Informatics at the Edward J. Bloustein School of Planning and Public Policy. Dr. Zhang joined the Bloustein School in August 2020. She received her Ph.D. from Georgia Tech's School of City and Regional Planning in 2017. She also earned Masters in City and Regional Planning, Civil Engineering, and Computational Science & Engineering from Georgia Tech. Previously, she was a research assistant at the Center for Spatial Planning Analytics and Visualization (previously known as CGIS) for six years and an assistant professor of Urban Affairs and Planning at Virginia Tech for three years. Her research focuses on the social and policy impacts of emerging transportation technologies, such as automated vehicles, ride-hailing services, and micro-mobility, and leveraging data science and visualization techniques to address critical urban planning issues. She has published 25 journal articles, 15 conference proceedings, and one book chapter. She has served as a guest editor for Transportation Research Part D: Transport and Environment.

Time: 8:00-9:00 p.m. US Central Time (Thursday, October 21, 2021)

Zoom Meeting ID: 732 641 0814 Passcode: 575829

Direct Link: https://tamu.zoom.us/j/7326410814?pwd=cGZKY045dmVkdzVRLy9MYWhocWorQT09

Faculty Host: Xinyue Ye, Dept. of Landscape Architecture and Urban Planning & Urban Data Science Lab

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