



Xinyu (Jason) Cao

Ph.D, Professor

University of Minnesota Twin Cities

Dr. Xinyu (Jason) Cao is a professor at the Humphrey School of Public Affairs, University of Minnesota, Twin Cities. He specializes in land use and transportation interaction and planning for quality of life. He has published more than 150 peer-reviewed papers and edited four books. Dr. Cao is internationally well-known for his research on residential self-selection in the

relationships between the built environment and travel behavior. He is currently leading the niche of machine learning applications in land use and transportation as well as satisfaction research. Dr. Cao is the Co-Editor-in-Chief of Transportation Research Part D and an associate editor of Transport Policy and Journal of Planning Education and Research. Dr. Cao received his degrees from the University of California, Davis (USA) and Tsinghua University (China).

Transformative impacts of machine learning on transportation planning and policy research

Abstract

As a conventional approach to uncover the relationships between variables, data modeling usually requires a priori assumption. However, if the assumption does not hold true, data modeling may yield questionable findings and theories. This presentation highlights the usefulness of machine learning approaches in improving our understanding of the relationships between variables. Using examples in the field of land use and travel behavior, the presenter shows that the approaches can (1) correct wrong conclusions resulting from data modeling; (2) discover interaction effects between variables without the priori knowledge; and (3) identify seemingly important but impractical land use interventions.

Time : 9:00-10:00, February 21, 2025

Venue: IDEC Large Conference Room