The Journey to More Responsive Transportation Network Planning via Enhanced Social Metrics and Automated Modelling: Convergence of Pervasive Data, Machine Learning and Equity

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Abstract

In this talk, Travis explores his past, present, and future collaborative work on modelling and simulation of complex transportation networks with an emphasis on emerging technology and the inclusion of social values. In particular, he notes applications that have highlighted inherent system complications of mobility systems (e.g., dynamic assignment, adaptive equilibrium, strategic equilibrium), ethical quantification (e.g., environmental justice, equity, resilience) and emerging technology for planning tools (e.g., automation, decision-support). Critically, he stresses the need to maintain certain key concepts of traditional transport planning (e.g., demand/supply equilibration) even while we make massive overhauls in replacing many aspects of our profession's processes with machine learning and AI-assisted approaches.

About Our Speaker

S. Travis Waller is the Lighthouse Professor and Chair of Transport Modelling and Simulation at the Technische Universität Dresden (TU Dresden) in Germany, as well as Honorary Professor at the Australian National University and the University of New South Wales (UNSW). Previously, he was the Head of the School of Civil and Environmental Engineering at UNSW Sydney with prior roles at UNSW including Deputy Dean of Research, and Founding Director of rCITI. He began his tenure-track career at the University of Illinois at Urbana-Champaign in 2001 and, subsequently, at the University of Texas at Austin (where he was promoted to Associate Professor with tenure in 2007 and full Professor in 2011). Past acknowledgements include MIT's Top 100 Innovators under 35, the U.S. NSF CAREER award, the Transportation Research Board (TRB) Pyke Johnson Award, the TRB Fred Burggraf Award and being named a Fellow of Engineers Australia. He has published more than 280 peer-reviewed scientific journal papers, supervised 45 completed PhD students and conducted over 60 funded research projects for 40 global sponsors.

More Information:

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