



Xue Luo

Affiliate, Civil and Environmental Engineering

Bio

BIO

Dr. Xue Luo is a Visiting Professor at Stanford University and a Professor at Zhejiang University, China. Her research lies at the intersection of transportation infrastructure engineering, mechanics, and artificial intelligence. She received her B.E. from Zhejiang University and Ph.D. in Civil Engineering from Texas A&M University in 2012. Prior to joining Zhejiang University in 2017, she spent over ten years at the Texas A&M Transportation Institute, contributing to NCHRP, FHWA, and state DOT projects in transportation infrastructure.

Dr. Luo's recent research focuses on transportation infrastructure intelligence and resilience. By integrating multiscale and multiphysics modeling, data analytics, and artificial intelligence, she develops physics-informed approaches that bridge engineering mechanisms and AI, enabling transportation infrastructure systems to perceive, predict, reason, and support decision-making under complex and evolving conditions. Her work advances resilient and sustainable infrastructure through innovations in materials, structural systems, and environmental adaptation, with the goal of extending service life, reducing life-cycle costs, and enhancing system reliability under increasingly demanding operational and climate conditions.

Beyond academic research, Dr. Luo works closely with transportation agencies, infrastructure owners, and industry partners to translate scientific advances into engineering practice. She has established long-term collaborations with transportation authorities, highway operators, and research institutes in Zhejiang Province and across China, contributing to the development of intelligent infrastructure systems, network-level performance assessment platforms, and data-driven maintenance decision-making frameworks. Her work has supported the monitoring, evaluation, and management of large-scale transportation infrastructure networks, helping advance the digital transformation, resilience, and sustainability of transportation systems.

Dr. Luo has led and contributed to numerous national, federal-, and state-funded research projects in both China and the United States. She has published over 200 journal and conference papers and has independently supervised more than 30 doctoral and master students. She serves on the editorial boards of several international journals and actively contributes to the research community through conference organization, peer review, and evaluations of industry standards and technical specifications.

Dr. Luo's long-term vision is to connect physical understanding, predictive simulation, autonomous decision-making, and intervention strategies to enable the next generation of intelligent and resilient transportation infrastructure.