



From Data Deluge to Discovery: Harnessing Accessible, Human-Driven, and Synthetic Data for the Future of Research



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Bio



Dr. Mani Golparvar-Fard is a Professor of Civil Engineering, Computer Science, and Technology Entrepreneurship at the University of Illinois at Urbana-Champaign. He directs the Real-time and Automated Monitoring and Control (RAAMAC) Laboratory, specializing in computer vision and machine learning for monitoring construction and operation in the built environment. His research spans Construction Engineering and Management, Societal Risk & Hazard Mitigation, and Sustainable and Resilient Infrastructure Systems. Dr. Golparvar-Fard has published extensively in top-tier journals from ASCE, Elsevier, and Wiley. He received the 2018 Walter Huber Research Prize from ASCE and the 2017 Young Professional Award from Engineering News-Record. He co-founded Reconstruct Inc., which raised \$31 million in venture funding and has been deployed on tens of thousands of projects worldwide.

Abstract

As research data—from BIM models to sensor streams—expands exponentially, the path to discovery lies not only in accessibility and reproducibility, but also in how we think about data as the lifeblood of innovation. In this talk, we will draw upon a research translation journey that transformed an NSF-funded project into a solution deployed on thousands of projects to explore how human-in-the-loop processes are critical for validating, curating, and generating ground truth data, ensuring quality and trust. We will also address the growing trend of companies treating data as their gold, hesitant to externalize algorithm development. We'll open a conversation on how financial structures could help unlock shared innovation. Finally, we'll dive into the transformative potential of synthetic data—enabling entirely new paradigms in training AI. By treating data as a first-class citizen—powered by human insight and synthetic augmentation—we can unlock the next wave of reproducible, collaborative breakthroughs.