SPTC WEBINAR SERIES

# Human–Machine Interfaces and Automation for Infrastructure Safety and Maintenance

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**WED., OCTOBER 22 | 2:00– 3:15 P.M. (CT)**

To register, scan the QR code or visit: **bit.ly/sptc10222025**

*1 PDH Provided | Hosted via Teams*

## ABSTRACT

We are experiencing a nationwide infrastructure crisis. In recent decades, infrastructure challenges, human and social behavior, urban and rural environmental changes, and natural disasters have increased in number, complexity, and frequency. Infrastructure designers and stakeholders need to understand, assess, and manage infrastructure more accurately, and faster. This seminar summarizes human–computer interfaces for quality inspection to enhance human decision–making using new technologies. Interfaces of data, sensors, analysis, image–based automatic defect–detection and visual inspectors are explored focusing on Augmented Reality (AR) systems. New design, monitoring, and damage interfaces will be presented in the context of human–machine collaboration using AI, computer vision, and structural dynamics.

## BIO

Dr. Fernando Moreu is an Associate Professor at the Department of Civil, Construction, and Environmental Engineering (CCEE) at the University of New Mexico (UNM). He holds courtesy appointments in the Departments of Electrical & Computer Engineering, Mechanical Engineering, and Computer Science at UNM and the founder and director of the Smart Management of Infrastructure Laboratory (SMILab). Prof. Moreu's research interests include structural dynamics and control, structural health monitoring, wireless smart sensor networks, cyber–physical systems, computer vision, augmented reality, unmanned aerial systems, bridge engineering, and aerospace operations. Prof. Moreu received his MS and PhD degrees in structural engineering from the University of Illinois at Urbana–Champaign (2005 and 2015, respectively). He was the 2022 outstanding junior faculty researcher award at the UNM School of Engineering. Prof. Moreu's projects are funded by the DOE, NSF, ONR, NAS, US DOT, TRB, and the commercial sector. He is a registered Professional Engineer since 2010. Prof. Moreu is the current Secretary of the ASCE Engineering Mechanics Institute (EMI) Technical Committee in Structural Health Monitoring and Control (SHMC) (2023–2026); the chair of ASCE EMI Education Committee (2024–2027); and the current vice chair of the Society for Experimental Mechanics Technical Division of Dynamics of Civil Structures (2025–2027). In 2025 Prof. Moreu was elevated to the rank of Fellow at ASCE.

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