



TEXAS A&M
Institute of
Data Science

Seminar Series



Dr. Namgyun Kim

Assistant Professor, Department of Construction Science, Texas A&M

Dr. Kim is an Assistant Professor in the Department of Construction Science (COSC) at Texas A&M University (TAMU), where he earned his Ph.D. in COSC. Prior to returning to TAMU, he served as an Assistant Professor in the Department of Civil Engineering at the University of Dayton from 2022 to 2024. His research focuses on gaining a deeper understanding of human attention and learning through empirical data analysis. Specifically, he integrates principles from learning science and cognitive psychology, leveraging emerging technologies to develop innovative learning platforms. His contributions have been recognized with multiple awards from prestigious organizations, including the American Society of Civil Engineers (ASCE), the Associated Schools of Construction (ASC), and the Transportation Consortium of South-Central States (Tran-SET). Dr. Kim serves as the principal investigator on several research projects funded by the National Science Foundation (NSF) and the Ohio Department of Transportation (ODOT). Additionally, he brings extensive industry experience, having spent nine years as a field engineer and project manager in the construction and offshore industries.

Augmenting Human Attention and Learning for Construction Safety and Health

The majority of injuries and fatalities in workplaces result from workers' unsafe behaviors. Traditional instructor-centric safety training, commonly used in the construction industry, has shown limited effectiveness in significantly reducing accidents. This limitation primarily arises because conventional training fails to address the underlying cognitive biases driving unsafe behaviors and does not adequately reflect individual workers' specific learning characteristics. To address these issues, Dr. Kim integrates data science and wearable sensors to uncover cognitive biases behind unsafe behaviors and tailor effective safety training interventions for construction workers. In this presentation, Dr. Kim will demonstrate how his research approach employs data-driven methods to: (1) objectively observe and quantify human cognitive biases using sensor-derived biosignals; (2) design targeted behavioral interventions grounded in empirical evidence; and (3) rigorously validate the effectiveness of these interventions in mitigating cognitive biases and preventing unsafe behaviors. Dr. Kim will share details from his ongoing interdisciplinary projects funded by the National Science Foundation (NSF) and the Construction Industry Institute (CII), concluding with a discussion of future research directions aimed at transforming the safety and health management paradigm in the construction industry through innovative, data-informed strategies.

Date:
April 28, 2025

Time:
2:00 - 3:00 pm

Location:
Blocker 220 and
Zoom

Faculty Host:
Dr. Yalong Pi,
Director of TAMIDS
Operational Data
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