Buildings, Robots, and Artificial Intelligence

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Moderator: Jason Thompson

Abstract: The increased rate of development and adoption of emerging technologies is transforming the construction industry. The digital transformation of the industry is being called Construction 4.0, a framework modeled after the Industry 4.0 paradigm. Many technologies are part of this framework and together can provide significant benefits to the industry. In this session, several transformative technologies will be presented and their benefits for the future of the industry discussed.

Learning objectives: Attendees will achieve the following learning objectives.
1. Identify how artificial intelligence can benefit the construction industry.
2. Explain the Construction 4.0 framework and its potential impact on the building sector.
3. Understand the role of emerging technologies, such as robotics in the building industry.
4. Discover how adopting transformative technologies can improve project efficiency, reduce costs, and minimize construction waste.

Biographies

Javier Irizarry is a Professor and Associate Dean at Georgia institute of Technology. He is a pioneer of research on Uncrewed Aerial System applications in the built environment, the Director of the CONECTech Lab at Georgia Tech; and an author of the book Construction 4.0 which presents the framework for developing next generation technology enhanced solutions for construction problems. He has over 20 years of academic and industry experience and has authored over 100 academic articles. His research has been nationally and internationally recognized and focuses on construction information technologies including virtual and augmented reality, reality capture technology, and Uncrewed Aerial Systems application in the AEC domain. Javier is a registered Professional Engineer (PE) as well as a FAA Certified Drone Pilot.

M.Z. Naser is an assistant professor at the School of Civil and Environmental Engineering and Earth Sciences & a member of the Artificial Intelligence Research Institute for Science and Engineering (AIRISE) at Clemson University. At the moment, his research group is creating Causal & eXplainable machine learning methodologies to discover new knowledge hidden within systems belonging to the domains of Structural engineering and Materials science to help us realize functional, sustainable, and resilient infrastructure. He is currently serving on a number of international editorial boards, as well as codal building committees (in ASCE, ACI, PCI, and FiB), and is the chair of the ASCE Advances in Information Technology committee. He has published more than 100 peer-reviewed papers and three books on structural engineering and machine learning.