

Distinguished Speaker: Security and Resilience of Transportation Cyber-Physical-Social Systems

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About the Speaker

Dr. Mashrur “Ronnie” Chowdhury is the Eugene Douglas Mays Professor of Transportation in the Glenn Department of Civil Engineering at Clemson University. He is also a professor in the Department of Automotive Engineering and Division of Computer Science at the School of Computing. Dr. Chowdhury is the founding Director of the USDOT UTC Center for Connected Multimodal Mobility, and co-director of the Complex Systems, Analytics and Visualization Institute. Dr. Chowdhury has published over 110 peer-reviewed journal papers, 90 peer-reviewed conference proceedings paper, 4 textbooks, 9 book chapters, and 8 professional magazine articles. He developed multiple software for connected and automated vehicle deployment (See: <https://cecas.clemson.edu/C2M2/products/>). He is an alumnus of the National Academy of Engineering Frontiers of Engineering program. He is a member of the TRB Committee on Intelligent Transportation Systems, fellow of ASCE, and senior member of IEEE.

About the Talk

Future transportation systems will increasingly rely on the interplay and balance of (a) physical structures such as vehicles, the surrounding infrastructure, and technological hardware; (b) cyber systems such as artificial intelligence-driven computing, software applications, and distributed data storage systems; and (c) human stakeholders, from developers and engineers to public agencies responsible for managing transportation infrastructure to travelers. In this way, tomorrow’s transportation systems are essentially transportation cyber-physical-social systems (TCPSS) which require a collective and convergent engineering research approach to ensure security and resilience by design. Such design of intelligent transportation systems requires understanding the system’s technology base, and, most importantly, social implications. This presentation will focus on the integration of cross disciplinary research to achieve the broad societal goals of a secure and resilient TCPSS. The talk will also discuss emerging areas such as quantum information processing, integrated edge and cloud computing, and society and human behaviors in the security and resilience of TCPSS. The breadth of the presentation will cover individual system users to society as a whole, discussing issues ranging from human–automation decision making to trust in connected transportation systems.

This seminar has been converted to a webinar and is now webcast live to a worldwide audience using Zoom.

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