

Government-University-Industry Research Roundtable March 2023 Webinar

Engineering Research Opportunities for Tomorrow's Unhackable Infrastructures

Abstract:

The Government-University-Industry Research Roundtable will convene a webinar to discuss a recent report on [Engineering R&D Solutions for Unhackable Infrastructure](#) by the Engineering Research Visioning Alliance ([ERVA](#)). ERVA visioning events enable the engineering research community to identify opportunities and priorities for high-impact research that addresses global and societal change. This report identifies engineering research priorities towards significant advancement in the security and resilience of tomorrow's cyber-physical infrastructures.

During this webinar, Dr. Saurabh Amin, Associate Professor and Director of the Pierce Laboratory for Infrastructure Science & Engineering at the Massachusetts Institute of Technology; and Dr. David Ott, Senior Researcher and Academic Program Director at VMware, will present the five key areas identified in the report for engineering research opportunities to enable unhackable infrastructure. They will also discuss longstanding trends in national and global scale cyberattacks on our increasingly complex and cyber-enabled infrastructures.

Speaker Biographies:



Dr. Saurabh Amin is an Associate Professor in the Department of Civil and Environmental Engineering (CEE) at MIT with he leads the Resilient Infrastructure Networks Lab (RESIL). He currently serves as Director of Henry L. Pierce Laboratory for Infrastructure Science and Engineering and CEE Undergraduate Officer. He is a member of the Laboratory of Information and Decision Systems (LIDS) and the Operations Research Center (ORC) at MIT. Since joining MIT in 2011, he has pursued research in the design of inspection and control algorithms for infrastructure systems. His work builds on foundations in control theory, game theory, and optimization in networks. His papers have addressed problems in resilient network control, information systems and incentive design, and optimal resource allocation in large-scale infrastructure systems.

By focusing on the domains of highway transportation, electric power distribution, and urban water networks, he develops new theory and design tools for improving the performance of

critical infrastructure systems in the face of disruptions, both stochastic and adversarial. Amin received his Ph.D. in Systems Engineering from the University of California Berkeley in 2011. His mentees have secured tenure-track positions at major universities, including Cornell University, Georgia Tech, NYU, USMA West Point, and UT Austin.



Dr. David Ott is a Senior Researcher at VMware Research and co-directs VMware's Academic Program. VMAP is the external research arm of VMware, bringing together top academic researchers and company technical leaders to better understand areas of disruptive technology, and to explore new areas of innovation. David often works at the intersection of computer systems, security, communications, and software. Prior to joining VMware in 2016, David worked as a Research Director for Intel Labs where he led industry-university research collaborations as part of the University Research Office. David led initiatives in a wide array of topics including 5G, SDN, trusted computing, digital video, FPGAs,

security and cryptography, and more. David is a Ph.D. graduate in Computer Science from UNC Chapel Hill.