PSERC Power Systems Engineering Research Center

PSERC WEBINAR

Cybersecurity and Resiliency for DERs and Microgrids

Manimaran Govindarasu and Murti Salapaka

Iowa State University & University of Minnesota

This talk will provide highlights of some of the ongoing research at the DOE funded research center, *CyDERMS:* Cybersecurity and Resiliency of Distributed Energy Resources (DER) and Microgrids-integrated Distribution Systems [https://cyderms.iastate.edu]. This center is a synergistic partnership between four regional universities – Iowa State University, University of Minnesota, University of Illinois Urbana-Champaign, and Michigan Tech – in collaboration with national laboratories, industry stakeholders. The focus of the research center is to develop, prototype, and demonstrate robust cyber-physical system (CPS) security algorithms, technologies, and tools to improve the cybersecurity and resiliency of distribution grid with high penetration of DERs and microgrids. The center also focuses on education and workforce development in cybersecurity for power grid via curricular and industry outreach initiatives.

The talk will first provide a brief overview of the center. In the first part, it will discuss Security Operations Center (SOC) for DER-integrated distribution grid that incorporates AI-based algorithms for cyber situational awareness and threat intelligence. In the second part, it will discuss robust algorithms for distribution grid topology estimation and attack-resilient control algorithms for microgrids. The talk will also identify several avenues for future research.

SEPTEMBER 17, 2025 | **1:00-2:00 P.M. ET**

LINK TO WEBINAR

(10:00-11:00 A.M. PT)

Manimaran Govindarasu holds the titles of Anson Marston Distinguished Professor in Engineering and Harpole Professor in Electrical and Computer Engineering at Iowa State University (ISU). His research expertise includes CPS Security for Smart Grid and Critical Infrastructures, IoT Security, and Real-Time Systems. He has served on the editorial board of multiple flagship IEEE publications, including IEEE Transactions on Smart Grid. He is the founding Chair of the Cybersecurity Working Group for Power Grid under IEEE PES. His research has been supported by U.S. DOE, NSF, DHS, DOD, PSERC. ISU EPRC. He is a Fellow of the IEEE.

Murti Salapaka holds the title of Vincentine Hermes-Luh Chair Professor in the Department of Electrical and Computer Engineering at University Minnesota, Twin-cities. His research expertise includes Control, Distributed Systems, Network Science, Learning, and Optimization, and application to DERs & Microgrids, nanoscience and biophysics. His research has been supported by NSF, DOE, and NIH as well as industry including Google and Asylum Research Inc. He is a recipient of the NSF CAREER award in 1998. He is a Fellow of the IEEE.