



VICEROY NORTHWEST INSTITUTE FOR CYBERSECURITY EDUCATION AND RESEARCH



CySER Virtual Seminar

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Are Machine Learning Detectors Sufficient? Exploring Cyberattacks and Defense Strategies in Smart Grids

Feb. 11, 2025, 1:10 – 2:00 PM Pacific

Team Link: [Click here to join the meeting](#)

Meeting ID: 220 288 552 031 | Passcode: VQ2ZL7pv

Call in (audio only) +1 509-498-6399 | Phone Conference ID: 382 868 32#

Abstract:

Smart grids integrate information and communication technology (ICT)-enabled devices and Internet of Things (IoT) technologies to support the transition toward decarbonization and electrification. However, the widespread deployment of these devices also introduces cybersecurity vulnerabilities. This seminar will introduce major cyberattacks targeting power systems, emphasizing their potential to disrupt grid operations and cause economic losses. Additionally, various defense strategies will be explored. Given the increasing adoption of machine-learning-based detectors in power systems, this session will assess the limitations of classic machine-learning detectors. The presenter will present a novel method for constructing highly stealthy false data injection attacks that bypass machine-learning detectors. This will enable devising more sophisticated defense strategies.

Bio:

Dr. Bo Liu is an Assistant Professor in the School of Engineering and Applied Science at Washington State University (WSU), Tri-cities, as of August 2024. He received his Ph.D. from the Mike Wieggers Department of Electrical and Computer Engineering at Kansas State University, Manhattan, KS, USA, in 2021, where he also worked as a Postdoc and Research Assistant Professor. He has M.S. and B.S. degrees from Harbin Institute of Technology, China. In the summer of 2018, he was a graduate research intern at the National Renewable Energy Laboratory (NREL). His primary research interests include cyber-physical security of power systems, machine learning applications, and state estimation in smart grids.



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