



UAA College of Engineering
UNIVERSITY of ALASKA ANCHORAGE



UAA Professional Development Seminar Series

Enhancing Power Grid Resilience and Online Situational Awareness to Black- Sky Hazards

Presented by Payman Dehghanian, Assistant
Professor, George Washington University

Disruptive events, whether they are malicious attacks, natural disasters, or human-caused accidents, continuously pose a risk for power grid operations. Lessons learned from some recent catastrophic events have pushed the electric sector's research and development focus on the concept of "resilience." This presentation will discuss the use of predictive tools and smart sensors for grid-scale online situational awareness and vulnerability analysis in power systems in the face of various sources of hazards. This highlights the need for efficient decision-making support tools for system operators, which help to achieve improved survivability and resilience to a wide range of fast- and slow-dynamic threats. A decision-making framework founded on efficient use of smart sensors and network built-in flexibilities for recovering from the HILP events will also be presented, along with several critical and practical considerations an operator will have to deal with for implementation in practice.

Payman Dehghanian is currently an Assistant Professor at the Department of Electrical and Computer Engineering at the George Washington University, Washington D.C. He received his Ph.D. degree from the Department of Electrical and Computer Engineering at Texas A&M University in 2017. He received his B.Sc. and M.Sc. degrees in Electrical Engineering from the University of Tehran, Tehran, Iran in 2009 and the Sharif University of Technology, Tehran, Iran, in 2011, respectively. His research interests include power system resilience and reliability assessments, synchrophasor technology, and smart electricity grid applications. Dr. Dehghanian is the recipient of the 2016 Best Engineering Graduate Student in the State of Texas, the 2015 IEEE-HKN Outstanding Young Electrical Engineer Award, the 2014 and 2015 IEEE Region 5 Outstanding Professional Achievement Awards, and the 2015 Best Ph.D. student Award in the Department of Electrical and Computer Engineering at Texas A&M University. In 2015 and 2016, he was also selected among the World's Top 20 Young Scholars for the Next Generation of Research in Electric Power Systems.

Friday, November 22, 2019

11:45 am-12:45 pm

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