

Converging Cybersecurity Solutions for Energy Systems to Practice

Cybersecurity Aware Dynamic Load Forecasting

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Link: <https://asu.zoom.us/j/9723906777>

Abstract: The increasing digital transformation of the power grid to enable clean energy creates unprecedented challenges for the smart grid industry. New types of distributed energy resources, increased interconnection and communication, load and generation volatility, demand pattern changes, energy policy changes, new reliability requirements, increasing end customers' expectations and demands, and the evolving revenue models are all huge challenges that utilities face today. To cope with the constant change and growing complexity, utilities must shift to more advanced predictive operations to improve their capability to forecast, understand, plan, and manage the near future energy states. At the center of this transition is the Short Term Load Forecasting (STLF) power application, which serves as the basis for utility planning and operations. Recent research shows that STLF is vulnerable to malicious attacks due to the undetectability of those attacks using standard data-analytics techniques. In this webinar, we will talk about three major topics: the recent advances in load forecasting algorithms to improve accuracy, the repercussions of malicious attacks, and possible data analytics techniques to detect and prevent those attacks.

Bio:



Dr. Aleksandar Selakov is an Assistant Professor and the Head of the Applied Software Engineering study program at the Faculty of Technical Sciences, University of Novi Sad. Dr. Selakov's main research areas are power system control, optimization, forecasting, and applied AI/ML in smart grids. Besides his academic career, Dr. Selakov has been actively working in the industry for the past fourteen years and has been closely involved in numerous industrial ADMS, EMS, GMS, and microgrid projects worldwide as a Product Expert, as well as serving as a Product Manager for one of the leading ADMS/EMS/GMS products on the market. Aleksandar is the Industry Chair for the IEEE PES Innovative Smart Grid Technologies Europe 2022 conference - an IEEE PES flagship conference, the largest European conference in the Smart Grid domain, and one of the largest globally.