PSERC WEBINAR

Smart Meter Data Mining for Peak Load Analysis and Outage Detection in Distribution Systems

Zhaoyu Wang
Iowa State University

This talk will present the research on extracting useful information from real smart meter data using machine learning techniques. The talk will begin by introducing smart meter data collection and real utility datasets. We will then discuss using smart meter data to improve the operation and resilience of distribution systems. In the first application, we propose a multi-state machine learning method to infer peak demand contributions of unobservable customers using their monthly billing information. In the second application, we develop a generative adversarial network (GAN) based method to detect outages in partially observable systems using smart meter measurements.

OCTOBER 13, 2020 | 2:00-3:00 P.M. EDT

LINK TO WEBINAR

(11:00-12:00 P.M. PDT)

Dr. Zhaoyu Wang is the Harpole-Pentair Assistant Professor with Iowa State University. He received B.S. from Shanghai Jiaotong University, and M.S. and Ph.D. degrees from Georgia Institute of Technology. His research interests include conservation voltage reduction, microgrids, smart meter data analytics, and load modeling. Dr. Wang is an editor of IEEE Transactions on Power Systems, IEEE Transactions on Smart Grid, IEEE Open Access Journal of Power and Energy, and IEEE PES Letters. He serves as the Co-Vice Chair of IEEE PES Distribution System Operation and Planning Subcommittee. He was the recipient of 2020 IEEE PES Outstanding Young Engineer Award.