UI-ASSIST WEBINAR:
Estimating Behind the Meter DER and Analyzing Impact on Load
Thursday, March 24, 9 am PT (21:30 IST)

U.S. INDIA COLLABORATIVE FOR **S**MART **DI**STRIBUTION SYSTEM WITH **ST**ORAGE

With the rapid growth of behind-the-meter (BTM) DERs in recent years, distribution operators have had to deal with the unobserved energy flow. This unobservable solar power generation also introduces uncertainty into the net load forecasting. This collaborative work among Washington State University, University of Hawaii and ETAP as part of the UI-ASSIST project presents deep learning-based algorithms for forecasting behind the meter photovoltaic (BTMPV) power generation using a limited number of sensors in a given distribution system. The concept of forecasting BTMPV can be extended as a service within smart meter for DSO as well as customers.

The predictions of short-term BTMPV are aggregated for the net load forecasting to compute the 'true' load forecasting. The developed approaches are validated and analyzed using a collection of actual BTMPV and load measurement data in a test distribution feeder.

Please join our monthly UI-ASSIST webinar on March 24, 9am – 10am PT.

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Chuan Qin received the B.S. degree in electrical and computer engineering and M.S. degree in computer science from Washington State University, Pullman, WA, USA in 2018 and 2021. He started Ph.D. degree from 2019 and now is a Ph.D. candidate in electrical engineering at Washington State University. His research interests include data-driven power grid monitoring and control, and application of machine learning and artificial intelligent in power grids.

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Dr. Kevin Davies received the B.S. degree in electrical and computer engineering from Carnegie Mellon University, Pittsburgh, PA, USA, in 2001, and the Ph.D. degree in mechanical engineering from the Georgia Institute of Technology, Atlanta, GA, USA, in 2014. He is currently an Assistant Researcher with Hawaii Natural Energy Institute, University of Hawaii, Manoa, Honolulu, HI, USA. His research interests include power system dynamics, multidomain physical modeling, real-time analysis, and hardware and software development.

Dr. Ahmed Y. Saber is currently VP Optimization and AI at ETAP R&D, USA. He mainly develops power systems simulation tools using intelligent optimization and AI/ML methods. His timely researches have been funded nationally and internationally. He won the IEEE Outstanding Engineer Award in Southern California, USA among more than 12,000 engineers for his contributions in smart-grid in 2012. He has published over 80 technical papers and holds 3 patents on optimization and AI. His research interests include AI/ML applications, smart-grid, vehicle-to-grid, renewables, storage, micro-grid, energy aggregator, blockchain for energy, cyber security for power systems, power system optimization, intelligent systems and IoT cloud.