

# IEEE BDA Tutorial Series: Big Data & Analytics for Power Systems

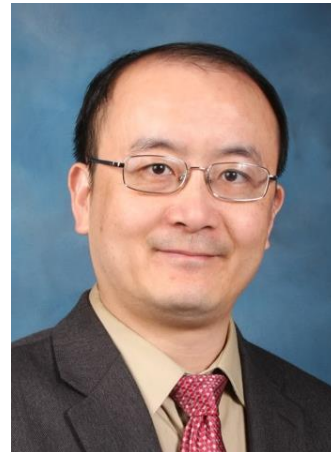
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## Machine Learning Applications to Forecasting Operations of Energy Storage Resources and Crypto Loads

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9:00 am-10:30 am, Wednesday, Aug. 31, 2022, Pacific Time  
(6:00 pm - 7:30 pm, Wednesday, Aug. 31, 2022, Central European Summer Time)

**Abstract:** Machine learning (ML) concepts have been discussed in academia and industry since the 1950s, but have only seen real-world application during the last few decades. Recent improvements in enabling technologies –computing speeds, data storage costs, and algorithm design-- have made ML applications more relevant. The last decade has seen substantial ML interest from the power systems community in particular, as power systems data, generation intermittency, and the need for more sophisticated optimization have grown. These developments present opportunities to improve several facets of grid operation reliability and security, from cyber security to operator situational awareness. This talk will present these opportunities of using ML to forecast operations of energy storage resources and crypto loads.

**Bio:** Dr. Pengwei Du is Supervisor of Resource Forecasting and Analysis with the Electric Reliability Council of Texas (ERCOT), leading the effort of integrating renewable resources into system operations at ERCOT. Prior to this, he was a senior research engineer with Pacific Northwest National Laboratory (PNNL). Dr. Du has over 16-year extensive experiences in simulation, modeling, protection and control, renewable energy integration, demand response and market design. Dr. Du is the recipient of IEEE PES Power System Dynamic

Performance Committee Prize Paper Award in 2016, IEEE PES Prize Paper Award in 2020 and IEEE Transactions on Power Systems Best Paper Award in 2021. Dr. Du is associated editor of IEEE Transactions on Power Systems (2018-2021), IEEE Transactions on Energy Markets, Policy and Regulation (2022- present) and the subject editor of IET Generation, Transmission & Distribution (2017-present). He is the fellow of IET.

Jian Ma is currently a Lead Operation Engineer at ERCOT. Before this role, he was a Senior Technical Advisory Consultant at Burns and McDonnell, MO, USA and a Research Engineer at Pacific Northwest National Laboratory, WA. USA. He received his Ph.D. degree in Electrical Engineering from University of Queensland, Brisbane, Australia, in 2008. His areas of expertise include power system stability and control, transmission operation and planning, and synchrophasor measurements applications, etc. He is a Senior member of IEEE.

**Link:** <https://asu.zoom.us/j/5513218843>