

ENGINEERING SOUTH 237 | WEDNESDAY, APRIL 16 | 12-1PM
PIZZA AND DRINKS WILL BE SERVED

Vogt ECE Lunchtime Colloquium



LUNCH & LEARN | ECE SEMINAR SERIES

YING ZHANG PH.D.

Dr. Ying Zhang is an Assistant Professor at the ECE Dept. of OSU and an Associate Editor in IEEE Transactions on Smart Grid. Supported by the U.S. NSF and the Department of Energy, her research mission is to bridge the gap between next-generation energy system operation and AI by utilizing diversified data from weather and renewable generation data, IoT devices, smart meters, inverters, and sensors, etc.



ABSTRACT

AI-Driven Digital Twins for Smart Distribution Grid Situational Awareness

For any meaningful functionality for reliable and resilient grid operation, power engineers need to know what is happening right now across the network, such as nodal voltage, power, health of electric devices, etc. Hence, real-time grid situational awareness must be obtained from heterogeneous sensor data streams to support accurate control and decision-making. This talk will bring a new technique to AI-aided grid operation by developing physics-informed trustworthy learning for fast yet accurate power flow calculation in complex electric distribution systems. This technique aims to replace a blind application of black-box data-intensive machine learning, which has limited creditability in real-world grids, and can potentially serve as a digital twin of the physical grid, using only 500 data points.



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