THE WSU-PNNL ADVANCED GRID INSTITUTE

ADVANCING POWER SYSTEM ANALYTICS AND MANAGEMENT WITH LLM-POWERED SOLUTIONS

~ by ~

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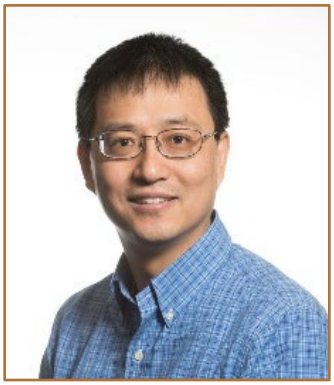
Wednesday, November 12 • 10 AM – 11 AM • **Join the meeting**

ABSTRACT

Artificial intelligence, particularly large language models, is creating new opportunities for power system analytics and management that weren't possible just a few years ago. This presentation demonstrates LLM-powered solutions we've developed for automating data extraction, improving visualization, and enhancing both scenario generation and decision support. Our work shows that LLMs can effectively bridge the gap between heterogeneous datasets, as well as streamline complex workflows in power system studies while also addressing practical challenges in their deployment. The results suggest that LLMs have considerable potential to improve the adaptability and reliability of power system operations, though implementation requires careful consideration of both technical and operational constraints.



BIO

Dr. Yousu Chen is Chief Engineer at Pacific Northwest National Laboratory (PNNL), where he directs the Advanced Grid Modeling Program—an interdisciplinary effort in mathematics, computing, modeling/simulation, and data analytics. His work advances high-performance computing, AI/ML, and quantum computing techniques for power systems, including modeling and simulation, control, and decision support. Dr. Chen is a Research Professor at the University of Denver, an IEEE Power & Energy Society Distinguished Lecturer, and recipient of the 2016 IEEE Member and Geographic Activities Leadership Award and a 2018 R&D 100 Award.