PSERC Power Systems Engineering Research Center

PSERC WEBINAR

Planning Assistant: Human-Supervised Agentic AI for Power System Planning and IBR Model Verification

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While conventional power system planning studies can be well addressed by human engineers, as data center and IBR penetration level increases, the grid planning complexity has significantly increased, making it challenging for planning engineers to manually handle a huge number of planning scenarios, stability issues, oscillations, multi-inverter interactions, contingency-dispatch combinations, system expansion designs, and unexpected instability risks.

We introduce an AI-powered power system planning agent. This AI agent can follow the requests of human engineers to automatically design planning workflows based on human requests, find suitable tools, analysis, and calculations, batch perform various planning studies (power flow, contingency analysis, transient stability, oscillation, economic studies, IBR model validation), suggest and verify mitigation measures. The AI system planner will not replace human judgement or today's grid planning toolbox with mature workflows. Instead, the AI agent will serve as an additional AI reasoning layer between human engineers and the grid planning tools. The AI reasoning layer can significantly reduce the human engineering time and efforts for repetitive planning studies.

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LINK TO WEBINAR

(10:00-11:00 A.M. PT)

Meng Wu received the B.E. degree in electrical engineering from Tianjin University, Tianjin, China, in 2010, the M.Eng. degree in electrical engineering from Cornell University, Ithaca, NY, USA, in 2011, and the Ph.D. degree in electrical engineering from Texas A&M University, College Station, TX, USA, in 2017. She is currently an Assistant Professor with the School of Electrical, Computer and Energy Engineering, Arizona State University, Tempe, AZ, USA. She was a Research Engineer with China Electric Power Research Institute, Beijing, China, from 2011 to 2012, and Beijing Sifang Automation Co. Ltd., Beijing, China, from 2012 to 2013. In 2016, she was a Research Intern with ISO New England, Holyoke, MA, USA. Her research interests include power system modeling, monitoring, control, and stability, electricity market, and integration of distributed energy resources.