



Advanced Prediction Techniques Applied to Smart Grids

Date:

Thursday, August 24, 2023

Time:

12:00 to 01:00 PM, EDT

Location:

Virtual Event

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Cost:

- \$10 for IEEE Members (Includes 1 PDH credit)
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- Free for General Admission (No PDH credit)
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All payments must be received by August 23, 2023.

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Abstract:

The power system industry is shifting towards a new digitalization era to better manage risk within volatile energy commodities, increase customer engagement, and enhance efficiency via grid optimization. Data analytics play a vital role in this transformation and, as such, different measurement architectures have been used and implemented to facilitate data capturing process and supervisory control at the generation, transmission, and distribution levels. This seminar will briefly review the recent outcomes of some smart grid challenges addressed by novel prediction techniques. At the generation level, decomposition techniques have been applied to handle the inherent uncertainty in short-term wind power prediction. At the transmission level, dynamic thermal line rating prediction has been studied as a viable solution to reduce congestion and utilize the actual capacity of the line. Considering the high inclusion of phasor measurement units at the transmission level, cutting-edge methods have been proposed to address stability status prediction of the grid following a contingency. Finally, at the distribution level, real-life data obtained from advanced metering infrastructure have been used for load prediction and customer segmentation.

Speaker:



Prof. C.Y. Chung is the Head of Department and Chair Professor of Power Systems Engineering in the Department of Electrical Engineering at the Hong Kong Polytechnic University (HKPolyU), Hong Kong, China. Before re-joining the department, Prof. Chung was the NSERC/SaskPower Senior Industrial Research Chair in Smart Grid Technologies, and the SaskPower Chair in Power Systems Engineering at the University of Saskatchewan, Canada. He was a prominent leader for advancing academic activities and applied research in power systems engineering development in the province. He led a research team, supported by SaskPower and NSERC of Canada, to conduct cutting-edge and long-term smart grid research for SaskPower and address critical technical issues associated with smart grid technologies and their applications to real power systems.

Prof. Chung has been very active in professional societies. He was the Member-at-Large (Smart Grid) and Member-at-Large (Global Outreach) of IEEE PES Governing Board, the IEEE PES Region 10 North Chapter Representative, and a member of IEEE PES Fellow Evaluation Committee. He was the Past Chairman of the IEEE Hong Kong Section, IEEE Hong Kong Joint Chapter of PES/IAS/PELS/IES and IET Hong Kong PES.

Prof. Chung is a Consulting Editor of "IEEE Transactions on Sustainable Energy", a Vice Editor-in-Chief of "Journal of Modern Power Systems and Clean Energy", and a Subject Editor of "IET Generation, Transmission & Distribution".

Prof. Chung is a Fellow of the Canadian Academy of Engineering, a Fellow of IEEE, EIC, IET, HKIE, and AAIA, and an IEEE PES Distinguished Lecturer. He is also the recipient of the 2021 IEEE Canada P. Ziogas Electric Power Award and 2021 Saskatoon Engineering Society (SES) Educator of the Year Award.