

THE 8TH IEEE CONFERENCE ON ENERGY INTERNET AND ENERGY SYSTEM INTEGRATION

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Special Session 03

AI Enabling Technologies for Active Distribution Networks

INTRODUCTION AND TOPICS

With the fast development of distributed energy resources (DERs), distribution networks have not been limited as traditional end-users but has come down to a physical platform for DER decision-makings (e.g., economic dispatch, resilience-oriented restoration), a.k.a. active distribution networks (ADNs). This makes that the planning and operations of ADNs are evolving as a complex task, particularly with the increasing uncertainties from DERs (e.g., rooftop solar power and electric vehicles) and measurements and situation awareness of tremendous DERs. Fortunately, Artificial Intelligence (AI) technologies, which have been shown powerful in many fields (e.g., natural language processing, computer vision), have been advocated in current research as one promising way to facilitate the efficiency and security of the planning and operations of ADNs. This special session aims to gather high-quality research around AI enabling technologies for ADNs. The goal is to advance the state-of-the-art in AI-based ADNs for more efficient and reliable ADNs. Topics of interest include, but are not limited to:

- Theory and applications of explainable AI and trustworthy AI in ADNs.
- Advance measurement and AI-based situational awareness.
- AI-assisted decision-making for ADN resilience enhancement.
- AI-enabling DER optimization and coordination.
- AI-enhanced medium-term and long-term scenario forecasting for ADN planning.

SPECIAL SESSION CHAIRS



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PUBLICATION & SUBMISSION

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Submission Deadline: 15 October, 2024

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For any questions, please contact the conference secretary, Ms. Joyce Zhong, via EI2_2024@outlook.com.