CALL FOR PAPERS

IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS

Special Issue on

Knowledge-and Data-Driven Smart Energy Management in Distribution Networks

Distribution networks (DN) are gradually transformed into their active form due to increasing penetration of distributed generation and fast development of use-side flexible resources. Due to limited measurements and communication capability, conventional power system analysis methods based on analytical formulation become inadequate for the management of DNs with high uncertainties and complex interactions. The advancement of the Internet of Things and artificial intelligence (AI) technologies enables data-driven approaches for the forecasting, modeling, operation, and control of DNs. To address challenges in practical industrial applications, such as interpretability, reliability, security, portability, and lack of high-quality training data, the nexus of data-driven and knowledge-based analysis methods have attracted growing research interest. The objective of this special issue is to identify and disseminate cutting-edge research focusing on integrating data-driven and knowledge-based technologies to tackle emerging challenges in smart management of active distribution systems. The guest editorial team solicits both original research papers and review papers. Topics of interest include, but are not limited to:

- Theory and framework of the hybrid data-driven and knowledge-based modeling for distribution network applications
- Embedding power system physics for mitigating data quality issues in AI implementations
- Meteorology-aided assessment, forecasting, and analysis of distributed renewable generation
- Hybrid physics and data-driven methods for modeling, pattern recognition, and non-intrusive decomposing of responsible electricity demand
- Physical knowledge-inspired data-driven methods for topology and parameter identification of distribution networks under limited measurements
- Data-based knowledge extraction for encoding voltage security constraints for optimal operation and control of distribution networks
- Security-guaranteed learning methods for online monitoring, control and fault diagnosis of renewable-dominated distribution networks
- Learning-to-optimize methods for decision-making and bidding strategy to achieve the aggregated distributed flexibility by incorporating network limits
- Data openness, sharing, trading, and supervision issues in the AI-based analytics for industrial power system applications

Submission Guidelines

Authors who wish to submit a paper for consideration must submit an extended abstract (2-page, free format, PDF version) to Dr. Jianxiao Wang and Dr. Zhenfei Tan from the Guest Editorial Board (E-mail: wang-jx@pku.edu.cn, tanzhenfei@sjtu.edu.cn). The Guest Editors will use the abstracts to select the manuscripts which will be reviewed for this Special Issue by the IEEE Industry Applications Society. Authors of accepted abstracts will receive a formal invitation with detailed instructions for submission of the complete manuscript to the IAS ScholarOne Manuscripts (S1M) site. Refer to http://www.ias.org for general information about electronic submission through ScholarOne Manuscripts.

Important Dates

- June 01, 2023: Call for papers announcement
- October 01, 2023: Deadline for extended abstract submission
- December 01, 2023: Decision notification for inviting full paper submission
- February 01, 2024: Deadline for full paper submission for review in S1M
- August 15, 2024: Notification of final decisions
- November 15, 2024: Publication materials due for approved papers
- January/February, 2025: Publication on IAS Transactions

Guest Editorial Board

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