Special Issue

Advancing Power System Intelligence: AI-Based Forecasting, Operation, and Control

Message from the Guest Editors

This Special Issue will bring together original contributions and comprehensive reviews that address the theoretical, computational, and application-focused aspects of AI-driven methods in modern power systems. The scope will cover the integration of data-driven and model-based techniques in inverter-dominated grids, cyber-physical energy networks, and coordinated energy management environments. Research areas may include (but are not limited to) the following:

- AI-based transient stability analysis and control in inverter-dominated power systems;
- Data-driven protection schemes for modern distribution and transmission networks;
- Machine learning techniques for short-term and long-term power system forecasting;
- Intelligent control strategies for grid-forming/grid-following inverters;
- The coordinated operation and optimization of integrated energy systems;
- Resilience assessment and enhancement via AI-enabled decision-making;
- Demand response optimization and real-time load-side management;
- Cyber-physical security and risk-aware control in intelligent grids.

Guest Editors

Dr. Guoqing Gao

Prof. Dr. Yue Zhou

Dr. Chenhui Lin

Prof. Dr. Yixun Xue

Dr. Qi Wang

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Electronics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
electronics@mdpi.com

mdpi.com/journal/electronics

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Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guest-edited by leading experts in selected topics of interest.

Editor-in-Chief

Prof. Dr. Flavio Canavero
Department of Electronics and Telecommunications, Politecnico di Torino, 10129 Torino, Italy

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