

Special Issue

AI-Based Techniques in Smart Grid Operations

Message from the Guest Editor

This Special Issue aims to bring together cutting-edge research and innovative applications of AI-based techniques in all facets of smart grid operations. We invite contributions that explore the use of machine learning, deep learning, reinforcement learning, optimization algorithms, and hybrid AI models in areas such as energy forecasting, load balancing, fault detection, grid stability, cybersecurity, and predictive maintenance. By highlighting both theoretical advancements and practical implementations, this Special Issue seeks to foster interdisciplinary collaboration and provide a comprehensive overview of the state-of-the-art in AI-driven smart grid operations.

- electricity storage dynamics
- optimal management of distributed energy resources
- power quality control
- active prosumers participation
- economic infrastructure utilization
- systems protection and self-healing
- smart metering and data exchange

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Algorithms are the very core of Computer Science. The whole area has been considered from quite different perspectives, having led to the development of many sub-communities: Complexity theory (limitations), approximation or parameterized algorithms (types of problems), geometric algorithms (subject area), metaheuristics, algorithm engineering, medical imaging (applications), indicates the range of perspectives. Our journal welcomes submissions written from any of these perspectives, so that it may become a forum for exchange of ideas between the corresponding scientific subcommunities.

Editor-in-Chief

Prof. Dr. Frank Werner

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