Special Issue

Advancing Power Systems with High Performance Computing and Machine Learning

Message from the Guest Editor

This Special Issue seeks to explore the applications and opportunities of HPC and ML in the context of power systems. We invite original research, reviews, and case studies that demonstrate the use of these cutting-edge technologies to address challenges and unlock new possibilities in the design, operation, control, and management of power systems. The topics of interest include but are not limited to the following:

- ML-driven techniques for power system planning, operation, and control;
- HPC-enabled simulations for grid stability, resilience, and reliability analysis, including cloud computing, FPGAs, and GPUs;
- Machine learning and deep learning applications in power system forecasting, fault detection, and diagnostics;
- Real-time data processing and analytics using HPC and ML for smart grid and microgrid management;
- Integration of ML and HPC in distributed energy resource (DER) applications;
- Predictive maintenance and asset management in power systems using ML

Guest Editor

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Deadline for manuscript submissions

closed (12 February 2025)

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Message from the Editor-in-Chief

Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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