

Special Issue

AI Applications to Power Systems

Message from the Guest Editor

Dear colleagues, Today, the flow of electricity is bidirectional, and not all electricity is centrally produced in large power plants. With the growing emergence of prosumers and microgrids, the amount of electricity produced by sources other than large, traditional power plants is ever-increasing. These alternative sources include photovoltaic (PV), wind turbine (WT), geothermal, and biomass renewable generation plants. Some renewable energy resources (solar PV and wind turbine generation) are highly dependent on natural processes and parameters (wind speed, wind direction, temperature, solar irradiation, humidity, etc.). Thus, the outputs are so stochastic in nature. New data-science-inspired real-time solutions are needed in order to co-develop digital twins of large intermittent renewable plants whose services can be globally delivered. Due to the scale of energy networks and the amount of data that need to be digitized, new techniques in data mining and AI approaches are needed to analyze and predict the behavior of complex power systems.

Guest Editor

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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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