Special Issue

AI-Driven Innovations for Enhancing Power System Stability and Operational Efficiency

Message from the Guest Editor

The rapid transformation of traditional power grids towards high levels of Inverter-Based Resource (IBR) penetration and dynamic distribution networks with the presence of smart loads and Electric Vehicles has forced system operators to investigate advanced operation optimization and planning techniques to maintain reliable and efficient operation. To ensure that energy markets are supported by a robust operation plan with high amounts of IBR penetration, there is a necessity to involve advanced optimization techniques to manage such complicated scenarios. Optimization techniques, which can receive help from sophisticated Artificial Intelligence-based system condition forecasts, with a focus on providing intelligent dispatch solutions for weak grid areas, enhanced IBR grid interconnection processes, and localized tunning-based generator settings, can be of a great interest to research in this area of study as well as to industry at a global scale.

Guest Editor

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Editor-in-Chief

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