Reinforcement Learning and Its Applications in Modern Power and Energy Systems

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Message from the Guest Editors

Power and energy systems undergo major transitions to facilitate the large-scale penetration of distributed energy resources. These transitions significantly increase the complexity and uncertainty in the operation of power and energy systems (PESs). This brings great challenges to optimally operating and controlling PESs using existing techniques based on physical models. With the rapid development of advanced sensors and smart meters, huge amounts of data can be collected, which brings opportunities for novel data-driven methods to deal with complicated operation and control issues in modern power and energy systems. Additionally, combining deep learning and reinforcement learning (RL) to form deep reinforcement learning (DRL) has overcome many inherent disadvantages of conventional RL algorithms. In recent years, DRL has been gaining considerable attention in many fields and has become one of the most widely promoted methods for control and optimization problems. In this Special Issue, we are looking for novel methods, algorithms, and technologies using reinforcement learning algorithms to enhance energy efficiency for the operation and control of power and energy systems.

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SpecialIssue

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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.

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