Special Issue

Adaptive Dynamic Programming and Intelligent Systems: Theory, Algorithms, and Applications

Message from the Guest Editors

Adaptive dynamic programming (ADP) and artificial intelligence are at the forefront of developing intelligent systems capable of self-learning and optimal decision-making in dynamic and uncertain environments. With the rapid progress of artificial intelligence, ADP techniques are increasingly integrated into intelligent systems, enabling them to learn, adapt, and optimize autonomously. However, challenges remain in improving algorithmic performance, enhancing computational efficiency, ensuring stability, and scaling ADP methods for real-world applications. This Special Issue aims to bring together the latest theoretical advancements, algorithmic developments, and practical applications of ADP in intelligent systems. We seek contributions that push the boundaries of ADP theory, explore its integration with artificial intelligence, and demonstrate its efficacy in solving real-world problems in areas such as robotics, smart grids, industrial process control, smart manufacturing, sustainable energy systems, healthcare informatics and multi-agent systems. The Issue will showcase how ADP and artificial intelligence are driving the next generation of intelligent systems.

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The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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