Special Issue

Optimization and Path Planning of Robotics

Message from the Guest Editor

Optimization and path planning constitute critical components of robotics that significantly enhance the efficiency, safety, and overall performance of real-world applications. These mathematical methodologies enable robotic systems to navigate complex environments, avoid obstacles, and execute tasks with precision and minimal resource utilization. This not only improves their operational effectiveness, but also extends their capabilities in various applications, ranging from industrial automation to autonomous vehicles and space exploration. As the field of robotics continues to advance and integrate into diverse domains, the development of sophisticated optimization and path planning methods becomes increasingly imperative for creating more intelligent, versatile, and reliable robotic solutions. This Special Issue aims to present innovative mathematical solutions addressing challenges in robotic optimization and path planning, with a particular focus on optimization techniques for robot motion, state-of-the-art path planning algorithms, collision avoidance strategies, simulation, and mathematical techniques for enhancing robot performance and navigation.

Guest Editor

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Message from the Editor-in-Chief

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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