Special Issue

Advances in Mathematical Modeling for Robotic Systems: Dynamics, Stability, Optimization and Control

Message from the Guest Editor

This Special Issue investigates the pivotal role of mathematical modeling in advancing robotic systems. We examine how mathematical models are essential for the stability analysis, design, optimization, and control of robots across various applications. We invite contributions that present innovative modeling techniques, stability analysis, simulation studies, optimization techniques, control algorithms, and applications that push the boundaries of robotic technology. This Special Issue encompasses a wide range of topics, from fundamental theoretical developments to practical implementations in fields such as industrial automation, medical robotics, service robotics, and aerial robotics. Our goal is to enhance the understanding of how mathematical models can drive more efficient, intelligent, and autonomous robotic systems.

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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