Special Issue

Dynamic Modeling and Model-Based Control of Soft Robots

Message from the Guest Editor

The development of dynamic models and control strategies for soft robotic systems remains a central challenge due to their continuum structure, material nonlinearity, and actuator compliance. Unlike rigid robots, soft robots require dynamic models derived from first principles, often rooted in Cosserat rod theory, piecewise constant curvature (PCC) models, or finite-dimensional strain parameterizations. Such modeling approaches enable the derivation of simplified but physically grounded representations that support the analysis and control of these systems. This Special Issue invites original research and review articles focused on model-based approaches that explicitly link dynamic modeling to control design. We seek contributions that demonstrate how modeling tools are used to derive feedback laws for soft robots, including pneumatic, tendon-driven, and hybrid architectures.

Guest Editor

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Message from the Editor-in-Chief

It is my great pleasure to welcome you to our open access journal, *Robotics*, which is dedicated to both the foundations of artificial intelligence, bio-mechanics and mechatronics, and the real-world applications of robotic perception, cognition and actions. The 21st century is the robotics century and intelligent robots will change our lifestyle forever. Let us work together toward the realization of intelligent robots step by step.
It is great fun to create intelligent robots and imagine their practical applications. *Robotics* is now ready to serve you in the long journey towards such a goal.

Editor-in-Chief

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