

Special Issue

Next-Generation Mobile Robotics: Intelligent Navigation, Adaptive Planning, and Sensor Integration

Message from the Guest Editors

This Special Issue is dedicated to the latest advancements and emerging trends in mobile robotics, with a focus on intelligent navigation, adaptive path planning, and sensor integration. We welcome research that tackles challenges in navigating dynamic and unstructured environments, advancements in simultaneous localization and mapping, and coordination and navigation within multi-robot systems in all modalities, such as underwater, aerial and terrestrial robots. Contributions exploring AI-driven vehicles and context-aware path planning, including resilient planning under uncertainty and real-time adaptive strategies for dynamic obstacles, are of interest.

Further, we encourage exploration of energy-efficient locomotion, adaptive gait generation, and stability control for multi-legged robots, alongside biologically inspired cognitive navigation and decentralized planning for swarm intelligence. Research investigating morphology-aware navigation for shape-shifting and modular robots, collaborative navigation in reconfigurable systems, and bio-inspired strategies for seamless transitions between locomotion modes are also highly relevant.

Guest Editors

Prof. Dr. Edgar Martínez-García

Laboratorio de Robótica, Institute of Engineering and Technology, Universidad Autónoma de Ciudad Juárez, Ciudad Juárez 32310, Mexico

Dr. Rajesh Elara Mohan

Engineering Product Development Pillar, Singapore University of Technology and Design, Singapore 487372, Singapore

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Applied Sciences
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
applsci@mdpi.com

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo
Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32,
20133 Milano, Italy

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