



Applied Sciences

an Open Access Journal by MDPI

CiteScore: 5.5

Impact Factor: 2.5

Special Issue Reprint

Motion Control for Robots and Automation

Edited by: Yi Fang, Yuxin Sun and Dongfang Liu

Motion control is central to modern robotics, governing how machines plan, execute, and adapt movements in real-world environments. As robots expand beyond factory settings into construction, healthcare, and service applications, the demands on motion control have grown substantially. This Reprint compiles fifteen peer-reviewed articles addressing key challenges in this field. The works cover trajectory planning for industrial robotic arms, feedback control for biomedical and mobile robot applications, dynamic obstacle avoidance using reinforcement learning, and safety-aware path planning for construction equipment. Several contributions focus on perceptual foundations of intelligent motion, including terrain sensing for autonomous excavators, point cloud registration, welding defect detection, and cross-domain image classification. Research on multi-robot task allocation under spatiotemporal constraints and non-prehensile manipulation for rapid object transfer is also featured. A recurring theme is the combination of model-based analysis with data-driven learning, yielding methods that are both theoretically grounded and practically effective. Many contributions include experimental validation on physical robotic platforms, reinforcing practical relevance. This collection offers researchers and engineers a focused snapshot of recent progress in motion control for robots and automation.



<https://www.mdpi.com/books/reprint/12791>