Special Issue

Non-Conventional Kinematic Structures in Modern Collaborative Industrial Robots: Issues and Solutions

Message from the Guest Editors

The spread of cobots in common industrial practice has led constructors preferring the development of collaborative features, which are necessary to prevent injuries to operators, over the realization of simple kinematic structures for which joints-to-workspace mapping is well known. An example is given by the replacement, in serial robots, of spherical wrists with safer solutions, where the danger of crushing and shearing is intrinsically avoided. Despite this tendency, the kinematic map between actuated joints and Cartesian workspace remains paramount importance for robot analysis and programming, deserving the attention of the research community. The objective of this Special Issue is to give visibility to all of the issues raised by such tendencies and the consequent solutions found by researchers and constructors. Topics of interest include, but are not limited to: Non-conventional kinematic structures: applications, drawbacks, and future developments.
Control strategies of robots with non-conventional kinematics.
Robot designs.
Motion and trajectory planning.
Redundantly actuated robots.

Guest Editors

Prof. Dr. Massimo Callegari
Department Industrial Engineering & Mathematical Sciences, Polytechnic University of Marche, Ancona, Italy
Prof. Dr. Luca Carbonari
Department Industrial Engineering & Mathematical Sciences, Polytechnic University of Marche, Ancona, Italy

Deadline for manuscript submissions

closed (31 May 2025)

Robotics

an Open Access Journal by MDPI

Impact Factor 3.3
CiteScore 7.7

mdpi.com/si/224622

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

mdpi.com/journal/robotics

Robotics

an Open Access Journal by MDPI

Impact Factor 3.3
CiteScore 7.7

mdpi.com/journal/robotics

About the Journal

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

Prof. Dr. Marco Ceccarelli
LARM2: Laboratory of Robot Mechatronics, Department of Industrial Engineering, University of Rome Tor Vergata, Via del Politecnico 1, 00133 Roma, Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, ESCI (Web of Science), dblp, Inspec, and other databases.

Journal Rank:

JCR - Q2 (Robotics) / CiteScore - Q1 (Control and Optimization)