

# Special Issue

## Autonomous Robots for Inspection and Maintenance

### Message from the Guest Editor

Since the current challenges of robotic autonomy are still limited to fundamental functions, applications to inspection and maintenance introduces various unexplored topics. The maintenance task often requires higher-precision position control and more intensive force control in highly constrained environments. This Special Issue invites articles addressing problems and solutions characterized for robotic inspection and maintenance. Potential topics include, but are not limited to, the following:

- High-precision robotic mapping;
- Semantic mapping and robot cognition;
- High-precision 3D reconstruction;
- Defect detection, identification and classification;
- Complex task planning and scheduling;
- High-precision mobile manipulation in highly constrained environments;
- Intensive force control;
- Long-term autonomy;
- Human-robot collaboration;
- Learning from demonstration;
- End-effectors for inspection and/or maintenance.

---

### Guest Editor

Prof. Dr. Tomonari Furukawa

Department of Mechanical and Aerospace Engineering, University of Virginia, Charlottesville, VA, USA

---

### Deadline for manuscript submissions

closed (31 August 2022)



## Robotics

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.3  
CiteScore 7.7



[mdpi.com/si/115632](https://mdpi.com/si/115632)

*Robotics*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[robotics@mdpi.com](mailto:robotics@mdpi.com)

[mdpi.com/journal/  
robotics](https://mdpi.com/journal/robotics)





# Robotics

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.3  
CiteScore 7.7



[mdpi.com/journal/  
robotics](https://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)