

# Special Issue

## Extended Reality and AI Empowered Robots

### Message from the Guest Editors

In recent years, there have been notable advancements in immersive technologies, thus broadening the audience and number of applications within the extended reality (XR) domain. This includes virtual reality (VR), augmented reality (AR), and mixed reality (MR), with these technologies demonstrating their exceptional capabilities in supporting telepresence and robot teleoperation. Today, the adoption of XR and AI technologies significantly contributes to empowering the application of robotics, enhancing users' performance, and supporting visualization aspects and the decision-making process in tasks such as tele-observation and teleoperation. In this Special Issue, we welcome the submission of contributions that describe novel approaches to the use of extended reality and artificial intelligence in tasks that empower robots and their applications. Potential topics include, but are not limited to, the following:

- VR/AR/MR for robotic teleoperation;
- 3D Vision and true-dimensional visualization;
- Immersive human-machine interaction;
- Medical robotics and VR/AR applications in healthcare
- Image analysis for teleoperation
- Creative XR and robotics

### Guest Editors

Dr. Salvatore Livatino

School of Physics, Engineering and Computer Science, University of Hertfordshire, Hatfield, UK

Dr. Dario Calogero Guastella

Department of Electrical, Electronic and Computer Engineering, University of Catania, 95131 Catania, Italy

### Deadline for manuscript submissions

31 December 2025



## Robotics

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

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## 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.

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### 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

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