

## Special Issue

# Human-Centered Robotics: The Transition to Industry 5.0

### Message from the Guest Editor

Rapid advancements in Industry 4.0 simplify complex industrial tasks through technologies such as the Internet of Things, data analytics, and collaborative robots. However, for small- and medium-sized enterprises (SMEs), approaches often remain conventional. This is primarily due to limited production volumes and concerns that human operators might be replaced by advanced robotic systems. The objective of this SI is to explore the significance of the latest intelligent technologies, particularly collaborative robots and their role in fostering effective human–robot interactions. Beyond handling production volumes, these robots can be vital for automating tasks that are strenuous or pose long-term musculoskeletal risks, thereby improving occupational safety, especially in SMEs. This SI invites contributions on topics including, but not limited to, the following:

- Intelligent human–robot interactions;
- LLM-based approaches for robot interactions;
- Collaborative robots for intricate or complex operations.

By focusing on human-centric automation, this SI aims to provide insights into how robotics can enhance productivity while maintaining the central role of human workers in Industry 5.0.

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### Guest Editor

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### Deadline for manuscript submissions

closed (30 April 2026)



## Robotics

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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

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