

Call for Papers

Special Collection on Dexterous Manipulation and AI Advancements in Electronics Manufacturing

Dear Colleagues,

We are pleased to announce a call for papers for a special collection on "**Advancements in Dexterous Manipulation and AI for Electronics Manufacturing and Cable Handling**".

As the demand for automation in electronics manufacturing continues to grow, so does the need for robotic systems capable of performing complex and delicate tasks. This special collection will focus on the latest breakthroughs in dexterous manipulation, including recent advancements in artificial intelligence, that promise to enable the automated assembly of electronic systems, integral to modern AI infrastructure.

We invite submissions that present novel research and applications in dexterous robotic manipulation, with a focus on electronic manufacturing and cable handling. Topics of interest include, but are not limited to:

- **Learning-based approaches:** The application of machine learning and AI to enhance manipulation skills.
- **Dexterous manipulation:** High-precision manipulation and insertion of electronic components or connectors, including control frameworks.
- **Sensor-based control:** The use of vision, tactile, and force sensing for improved dexterity.
- **Cable handling:** Automated routing, insertion, and management of flexible cables and wires.
- **System integration and case studies:** Real-world examples of integrated robotic systems in electronics manufacturing.

The deadline for submission is **December 1st, 2026**.

Submissions will undergo a peer-review process, and accepted papers will be published in the special collection. We look forward to receiving your contributions and to sharing the latest advancements in this exciting field.

Please refer to the guidelines defined in
<https://www.ieee-ras.org/publications/ra-p/information-for-authors/>

Sincerely,

The Guest Editors

Guest editors

Jimmy Baraglia

Jimmy earned his PhD from Osaka University, where his research centered on cognitive developmental robotics and human-robot collaboration.

Yadunund Vijay

Yadunund holds a Master of Engineering from the Massachusetts Institute of Technology (MIT) and a Bachelor's from the Singapore University of Technology and Design (SUTD), specializing in advanced manufacturing.

Andreas Bihlmaier

Andreas holds a Dr.-Ing. (PhD in Engineering) from the Karlsruhe Institute of Technology (KIT), with a research focus on robot software systems, machine learning in robotics, and semantic technologies.

Brian Gerkey

Brian earned his PhD in Computer Science from the University of Southern California (USC) and completed a postdoctoral fellowship at Stanford, later becoming a seminal figure in the robotics community as the co-founder of Open Robotics and the ROS project.

Torsten Kroeger

Torsten holds a PhD in Computer Science from Stanford University and was previously a Professor of Computer Science at the Karlsruhe Institute of Technology (KIT), where he specialized in real-time robot motion control.