CALL FOR PAPERS

IEEE TRANSACTIONS ON
AUTOMATION SCIENCE AND ENGINEERING

Special Issue on Automation and AI in Construction and Building

The construction industry is one of the most important economic sectors with spending of 9-15% of GDP in most countries. However, the construction industry is increasingly facing challenges such as low productivity and inefficiency, high safety risk, and workforce shortages. Compared with other industrial sectors with steadily increased productivity, productivity and work safety in the construction industry have slowly improved. Automation and Artificial Intelligence (AI) technologies have demonstrated promising potential to improve productivity, enhance worker safety and health, and address labor shortages. These challenges and opportunities have significantly expanded the scopes of traditional automation science and engineering. The goal of this special issue/section is to disseminate the recent research advances and achievements in automation and AI in construction and building from academics and practitioners. Papers are invited on original investigations relating to design, modeling, analysis, and case demonstration of automation and AI systems and applications in construction and building equipment, processes, and management.

Specific topics of interest include, but not limited to:

- 3D printing and robotic printing for construction
- Robotics for building and construction
- Augmented, virtual, and mixed reality (AR/VR/MR) for construction and building
- Building information modeling (BIM)
- Wearable sensors and assistive devices for construction workers
- Teleoperation in construction workplaces
- Robotic perception, motion planning and navigation methods in construction and building
- AI and machine learning methods and applications for construction
- Generative AI for construction and building automation
- Safe human-robot collaboration in construction tasks
- Automation in construction logistics and scheduling
- Collaborative automation technology for heavy construction equipment

Important Dates

- May 1, 2024: paper submission deadline.
- September 1, 2024: completion of the first-round review.
- January 1, 2025: completion of the second-round review.
- February 1, 2025: final submission due.
- April 1, 2025: tentative publication date.

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Paper Submission

All papers are to be submitted through the IEEE's **Manuscript Central** for Transactions on Automation Science and Engineering http://mc.manuscriptcentral.com/t-ase. Please select "Special Issue" under Manuscript Category of your submission. All manuscripts must be prepared according to the IEEE Transactions on Automation Science and Engineering publication guidelines http://www.ieee-ras.org/publications/t-ase. Please address inquiries to jgyi@rutgers.edu.