

Special issue on

“Artificial Intelligence Generated Content (AIGC) for Humanoid Robots”

With the rapid progress in information technologies, they are permeating all aspects of robotic systems, especially humanoid robots, expediting the generation and availability of big data, fundamental models, and so on. Traditionally, humanoid robots would collect sensor data from various sources and simple inference is performed that usually does not add to the dexterity of the robots. On the other hand, applying more sophisticated AI approaches require sensor data to be annotated, which is impractical when high volume high frequency data are considered. This seriously prevents AI-enabled technology from being effectively deployed in humanoid robots. Artificial Intelligence Generated Content (AIGC) is a novel method based on AI technology that can generate synthetic content based on rules learned from data. In principle, AIGC enables robots to seamlessly integrate knowledge, perception, learning and action to reach more advanced automation-to-intelligence goals. However, several open challenges arise with the coupling between AIGC and the humanoid robots application. In addition, the performance evaluation of AIGC is not settled since benchmark datasets are far from being well established.

This special issue is intended to expedite publication of novel and significant research results, technology and/or conceptual breakthrough of emerging topics of *Artificial Intelligence Generated Content (AIGC) for Humanoid Robots*. We invite submission of high-quality papers as related to recent advances in such emerging topics, including but are not limited to the following:

- **AIGC architectures for humanoid robots**
- **Multi-modal chip for humanoid robots**
- **Learning based method for high density multi-modal humanoid robot sensors**
- **Multi-modal perception and cross-modal generation (text2image, text-2-3D, text2video) for humanoid robot applications**
- **Embodied fundamental models for humanoid robot applications**
- **AIGC for digital twins**
- **Sim2real methods for humanoid robots**
- **Copilot-based Human-AI collaboration for humanoid robots**
- **AIGC for multi-agent humanoid robots**
- **Benchmark of AIGC for humanoid robots**
- **Safety and ethics of AIGC in humanoid robot applications**

Submission guidelines

<https://onlinelibrary.wiley.com/page/journal/15564967/homepage/forauthors.html>

Important Dates

Submission deadline:	Oct. 31, 2025
Notification of first round of reviews:	Dec. 31, 2025
Revised submissions due (for guidance only):	Feb. 28, 2026
Final notice of acceptance/rejection:	Apr. 30, 2026

Guest Editors**Haisheng Xia**

Tongji
University

hs_xia@tongji.edu.cn

**Gary G. Yen**

Oklahoma State
University

gyen@okstate.edu

**Zhaojie Ju**

University of
Portsmouth

Zhaojie.Ju@port.ac.uk

**Samer Mohammed**

Paris-Est Créteil
University

samer.mohammed@u-pec.fr