Journal of Robotics

Special Issue on
Human-Humanoid Robot Interaction

CALL FOR PAPERS

Humanoid robots have been used in a number of settings, in which the robots have taken different roles and done tasks in shopping contexts, entertaining purposes, guiding duties, and medical cares. As robot autonomy increases, instead of acting like a machine following humans' commands or performing the predefined tasks, humanoid robots work in partnership with human operators along with well-developed coordination skills to collaborate with humans in various emergent or unpredictable situations. However, the humanoid robot itself consists of various complex (sub)systems that in spite of the best design efforts may not work perfectly under a variety of real-world conditions. Research on effectively interacting with such robots has increased dramatically in recent years and received attention from many domains.

Human-humanoid robot interaction (HHRI) raises many research opportunities, including human-related (e.g., prior experiences, perceived workload, and cultural dynamics), robot-related (e.g., appearance, communication styles, and information transparency), and context-related (e.g., risk, complexity, and task load) aspects. This special issue focuses on three main design challenges:

(i) How to develop an effective interaction scheme (e.g., gesture, gaze, and voice) to support users' needs in various HHRI-related contexts.

(ii) How to increase users' adoption and acceptance in humanoid robots, regarding their cultural characteristics, personality traits, age differences, and so forth.

(iii) How to broaden and extend the vision of conventional human-computer interaction (HCI) or human-robot interaction (HRI) theories and incorporate them into HHRI.

Potential topics include but are not limited to the following:

- Connecting different (HCI/HRI) theories or methods and applying them to HHRI
- Building novel interaction schemes, technology, and models on HHRI
- Providing conceptual models or formulations of HHRI to enhance overall task performance as well as user experience
- Conducting empirical research to examine HHRI-related designs
- Creating applications in HHRI in various settings, such as shopping contexts, entertaining purposes, guiding duties, medical cares, and educational platforms
- Examining the effects of individual differences (e.g., personality traits, cultural dynamics, social norms, cognitive abilities, gender, or age differences) in HHRI
- Measuring user acceptance or adoption in HHRI
- Implementing artificial intelligence or machine learning approaches to HHRI systems
- Designing large scale HHRI systems (i.e., multi-human multi-humanoid interaction)
- Reviewing the state of the art in HHRI

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/jr/hhri/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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Submission Deadline
Friday, 6 April 2018

Publication Date
August 2018