Call for Papers

Special Issue on Human-autonomous Devices for Rehabilitation and Assistance

Overview

Recently, technological advancements have led to the use of autonomous devices such as robotic devices to facilitate gait rehabilitation and assistance. While autonomous devices have become faster, “smarter”, stronger, more accurate and reliable, challenges remain in adaptability, decision making and robustness to changing and uncertain situations. To address these shortfalls and improve flexibility to fast production changes, future working environments will be populated by both humans and autonomous devices, sharing the same workspace. This scenario entails a series of issues and topics, such as safety, optimal tasks allocation and scheduling, learning and error recovery, autonomous assistance devices aims at developing novel solutions for assisted therapy and objective functional assessment of patients with reduced motor and cognitive abilities. Assistive devices are devised to be usable in a lifelong perspective in real-life scenarios, and thus, they need to take into deeper account the end-user subjective preferences in order to maximize their overall acceptability.

This special issue aims at developing autonomous assistance solutions devised for promoting independent living of disabled and elderly citizens. We are soliciting original contributions that have not been published and are not currently under consideration by any other journals. Both theoretical studies and state-of-the-art practical applications are welcome for submission. All submitted papers will be peer-reviewed and selected on the basis of both their quality and their relevance to the theme of this special issue.

Topics

Topics of interest include, but are not limited to, the following scope:

- Methodical approaches to human-oriented design
- Quantitative analysis methods for rehabilitation and sports training
- Human motion analysis and understanding for imitation learning and human–robot interaction
- Innovative actuators, control algorithms applied to rehabilitation robots, exoskeletons, and prostheses
- Measurements of kinetic and kinematic variables for activities of daily living
- Application of robotic systems for biomechanical modeling of the human body
- Autonomic assistance devices for cognitive rehabilitation and for diagnosis and treatment of neurodevelopmental disorders
- Modelling and simulation for robotic rehabilitation systems
- Informational monitoring, control, and data fusion for rehabilitation systems
- Experimental methods to compare artificial and natural systems
- Continuum autonomous devices for medical applications

Important dates

- First submission deadline: 31 January 2020
- First review results: 31 March 2020
- Revised version submission: 31 May 2020
- Final decisions: July 2020
- Tentative publication: September 2020
Submission procedure

Authors should follow the JAISE Journal manuscript format described at the journal site. Manuscripts should be submitted online through https://www.mstracker.com/submit1.php?jc=jaise.
A copy of the manuscript should also be emailed to the Corresponding Guest Editor at the following email address: norbert.stoll@univ-rostock.de.

Guest editors

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