Special Issue

New Perspectives on Human–Robot Interactions in Rehabilitation and Assistance

Message from the Guest Editors

In today's world, the aging population is growing, and the number of people with disabilities is significant. It has placed unprecedented demands on healthcare and caregiving systems worldwide. Rehabilitation and assistive robotics have emerged as transformative technologies, offering the potential to enhance the autonomy and quality of life for elderly and disabled individuals. However, critical challenges remain in enabling these users to interact with robotic systems in a seamless, intuitive, and minimally burdensome manner. A key challenge lies in the development of human–robot interactions paradigms that accommodate the diverse needs of users with physical, cognitive or sensory impairments. For instance, users with speech difficulties, limited fine motor skills or upper limb impairments may struggle to convey their intentions effectively, hindering their ability to independently control robotic systems. Innovative approaches are needed in areas such as intention recognition, human–robot interaction methods, autonomous task planning, and any other assistive technologies. These advancements must prioritize reducing the cognitive and physical burden on users.

Guest Editors

Dr. Yaxin Liu

Prof. Dr. Bo Huang

Dr. Ming Zhong

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Applied Sciences
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
applsci@mdpi.com

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo
Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32, 20133 Milano, Italy

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