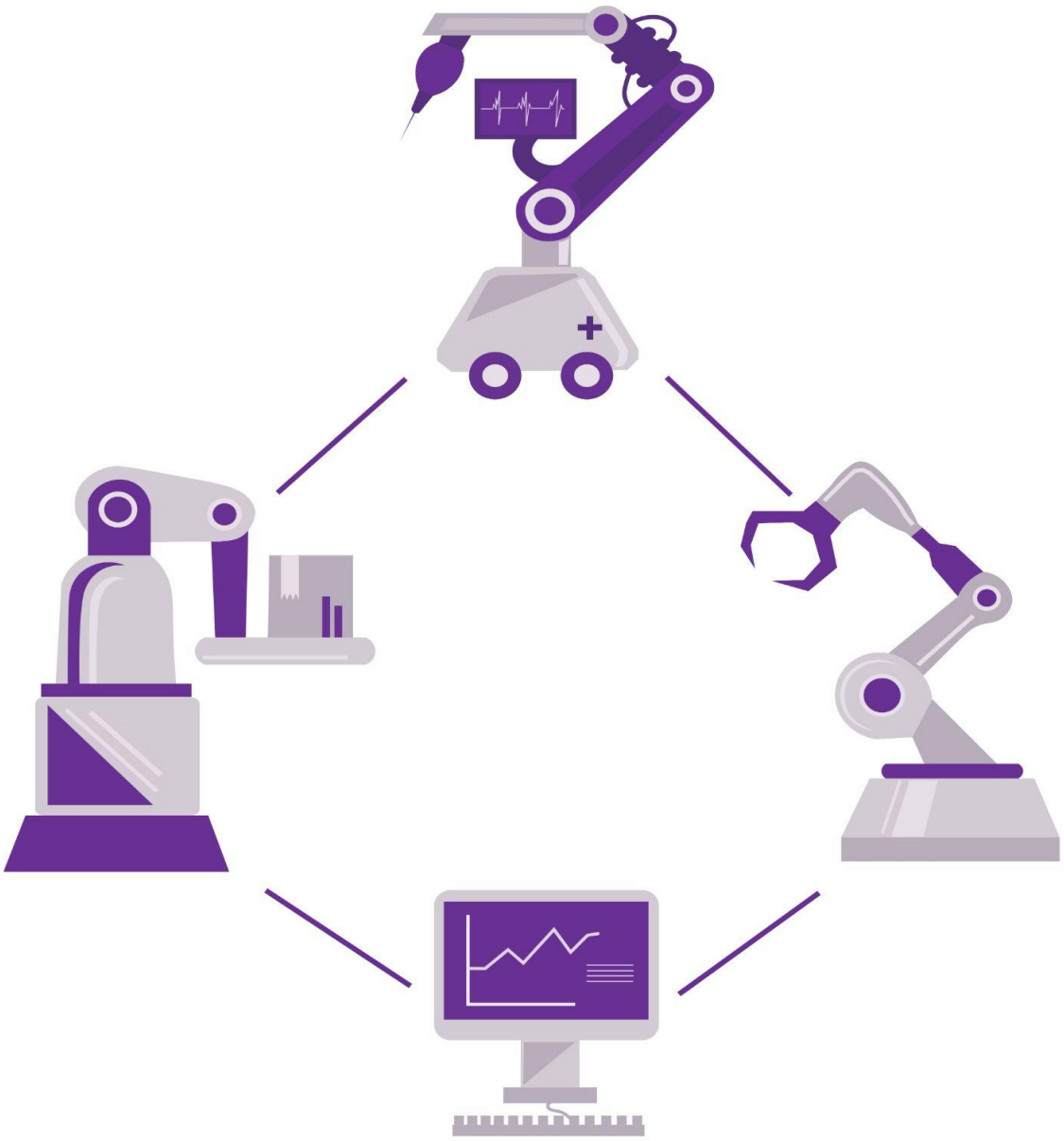
Special Issue International Journal of Robotics and Automation – Call for Papers



Social Robotics

01.08.2023

[Article Submission Deadline: 01.12.2023]
[Authors Notification Date: 15.01.2023]
[Revised Papers Due Date: 30.01.2023]
[Final notification Date: 15.02.2024]

Overview

For decades, the world of automation was structured by a certain order, robotics. Robotics is a trend that we will continue to see beyond 2023 and global robotic service sales are expected to top $55 trillion in 2023, according to the International Federation of Robotics (IFR). Most recently AI and Big Data powered robots worked at factories, and humans enjoyed the advantages of their work. On the other hand, the domestic robot is a service robot type, an independent robot used primarily for housekeeping, but could also be used for education, entertainment, and healthcare. Although most household robots are simple, some are highly independent and are connected to Wi-Fi home networks or intelligent environments. Elderly and immobilized residents use domestic humanoid robots to help them stay engaged both physically and cognitively, giving way to an elevated standard of living. Telepresence robots can be moved into remote places and communication can be established using the camera, speaker, and microphone allowing for dialogue between two parties to become closer to in-person dialogue, even when far apart. For quite a while now robots constructed for therapy have also been in production. Some of these applications may include autism or physical therapy. Network robots are able to coordinate and strategize amongst each other, allowing for large scale projects to be undertaken with relative ease, fewer human injuries, and a quicker time to completion. Home robots can vacuum the house, clean the kitchen or bathroom, load the dishwasher, or polish the shoes (among many other applications). Despite hundreds of millions of potential customers and users, few such robots are currently available. There are several challenges in the economic context, the situation of the market, the marketing of service robots, and the technical environment slowing the triumphal procession of domestic robots.The new technology perspectives currently being discussed have contributed to solving the challenges and reinstating the progress of social robots.

Against this background, this special issue creates an ideal opportunity for discussing technologies in the development of Social Robotics, the myriad of applications they will go on to inhabit, and the millions of people that stand to benefit from their proliferation into public and private sectors of the economy.

The topics of interest for the special issue include, but are not limited to, the following:

- Human-machine interaction in domestic settings
- Cognitive capabilities and decision-making
- User experience and acceptance of the social robot settings
- Ethical considerations
- Adaptive learning and personalization
- Privacy and security considerations
- Motion planning
- Control of social robots
- Applications of social robots

Submission Information

- A paper to-be-submitted must follow the journal's general requirements and should be submitted directly to the International Journal of Robotics and Automation at IJRA Editorial Manager. Learn more about ACTA Press submission requirements at https://www.actapress.com/submissioninfo.aspx
- Submissions should be classified as "Full Article for a special issue". **Note:** Please kindly comment on your submission, indicating that you are referring to the Special Issue of Social Robotics
- Accepted papers will be published as a special issue in *The International Journal of Robotics and Automation* of ACTA Press.

Guest Editor Bios

Dr. Alireza Taheri
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Dr. Alireza Taheri is a distinguished expert in the realm of social robotics. With a visionary perspective and a specialized passion for advancing human-robot interactions, he has emerged as a pillar in the field, shaping the future of robotics through innovative research.

Dr. Taheri holds a Ph.D in Mechanical Engineering at the highly-respected institution Sharif Institute of Technology, where he first achieved his B.Sc and M.Sc in Mechanical Engineering as well. Throughout his academic journey, Dr. Taheri exhibited remarkable curiosity and an insatiable desire for knowledge. His academic fortitude extends beyond his own field of expertise, encompassing cognate areas such as artificial intelligence, human-computer interaction, and cognitive science, which have heavily influenced the direction and vigor of his research.

As a visionary in the field of social robotics, Dr. Taheri has authored numerous influential research papers, cementing his reputation as a meticulous and calculated scholar. His work spans the development of empathetic and socially aware robotic systems, exploring the intricacies of human emotions, non-verbal communication, and social cognition (to name a few). Dr. Taheri's innovative research has been published in top-tier journals and presented at esteemed international conferences, resonating with academics and practitioners alike.

Throughout his illustrious career, Dr. Taheri has assumed leadership positions in prestigious research institutes and academic associations dedicated to advancing social robotics such as the Cognitive Sciences and Technologies Council (CSTC) and the Iran National Science Foundation (INSF). Additionally, he has been the recipient of many awards and continues to inspire minds worldwide, showing no signs of slowing down. He has established and led dynamic research teams, fostering an environment of creativity and excellence. Driven by a collaborative spirit, Dr. Taheri has engaged in fruitful partnerships with experts from diverse disciplines, forging bridges between robotics, psychology, and beyond.

Beyond academia, Dr. Taheri has made significant strides in applying his research findings to real-world applications. His work has found resonance in industries seeking to implement socially intelligent robots for healthcare, education, transportation, sports, rehabilitation, disability assistance, and more. He is responsible for many patents. By addressing ethical considerations and the human-robot interaction dynamics, Dr. Taheri ensures that technology serves as a catalyst for positive societal impact.

As a testament to his expertise, Dr. Taheri is Head of the Social and Cognitive Robotics Laboratory at the Sharif Institute of Technology. It is with great honor that we announce his addition to *The International Journal of Robotics and Automation* as a Guest Editor for our special issue on Social Robotics. In this role, Dr. Taheri will curate a special issue dedicated to the latest advancements and challenges in the field of social robotics. His keen eye for cutting-edge research and dedication to scientific excellence will undoubtedly elevate the quality and impact of this special issue to great heights.

Dr. Afshin Taghvaeipour

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Dr. Taghvaeipour is an accomplished and dynamic editor who has recently joined our prestigious journal, bringing with him a stellar background in the field of engineering. With an unwavering passion for advancing scientific knowledge, Dr. Taghvaeipour brings a wealth of expertise and a fresh perspective to our esteemed publication.

Dr. Taghvaeipour began his journey as a passionate and calculated scholar at the Amirkabir University of Technology, receiving a bachelor's degree (B.Sc). Eager to learn more, he went on to achieve a Masters degree (M.Sc.) at Sharif University of Technology, eventually reaching the upper echelons of knowledge in the field and being granted a Ph.D. in Mechanical Engineering from McGill University. His educational journey has been marked by a relentless pursuit of excellence, fueled by curiosity and a deep commitment to pushing the boundaries of engineering research.

Throughout his career, Dr. Taghvaeipour has demonstrated a persistent dedication to advancing engineering research and promoting innovation. His groundbreaking research and extensive publication record have significantly contributed to the field, earning him recognition as a leading authority in the Mechanics of Robotic systems, Computer-aided engineering, and rigid/flexible multibody system dynamics (to name a few) .

Dr. Taghvaeipour outstanding contributions have garnered numerous accolades and recognition within the engineering community. He has received various prestigious awards such as the Bonyad Nokhbegan Award for Young Scholars and the McGill Doctoral Award for his pioneering research, reflecting his exceptional competencies, breadth of work, and impactful nature of publications.

We are thrilled to have Dr. Taghvaeipour as part of our editorial team, bringing his expertise, passion, and relentless commitment to the advancement of engineering theories, knowledge, and applications. His addition reinforces ACTA Press' dedication to the highest standards of academic publication and further positions us at the forefront of innovative research in the field.

Mr. Ehsan S. Moghaddam

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Mr. Moghaddam is an exceptionally talented and promising engineer who is already making significant strides in the field of mechanical engineering. With a knack for innovation and a visceral fervor for engineering knowledge, Mr. Moghaddam is charting an extraordinary path towards shaping the future of the discipline.

Mr. Moghaddam embarked on his academic journey at the prestigious University of Tehran, where he qualified in the top (based on a national university entrance exam) and earned a Bachelor's degree (B.Sc). Encapsulated by his thirst for knowledge and desire to delve deeper into the field, he pursued a Master's degree from the renowned Amirkabir University of Technology, qualifying in the top of applicants and specializing in Mechanical Engineering (M.Sc). Recognizing that the field is advancing rapidly and diverging in profound ways, he is currently working towards his Ph.D., where his past, current and future research is lighting the way for new technological innovations.

As is the case, his research is characterized by its originality, depth, and potential for transformative impact. His work revolves around applied design (dynamics and control), where he has already made notable contributions through groundbreaking ideas, methodologies, and experimental designs in the specific areas of rehabilitation robots, surgical robots, and social robots (to name a few).

With an iron-clad will dedicated to advancing mechanical engineering, Mr. Moghaddam envisions a future where technological advancements improve lives, enhance sustainability, and drive innovation. He aims to bridge the gap between theory and practice, translating research into real-world applications that address pressing challenges and contribute to the betterment of society. Currently, he is working as a Robotics Engineer developing Laparoscopic Surgical Robots (LSR).

We are proud to celebrate Mr. Moghaddam's exceptional talent and persistent dedication to advancing mechanical engineering, while welcoming him to assist in the creation of this special issue as a guest editor. His promising trajectory and commitment to pushing the boundaries of innovation make him a true trailblazer in the field.