ICSR 2023 - Workshop Proposal

Title

ALTRUIST: sociAL roboTs for peRsonalized, continUous and adaptIve aSsisTance

Duration

• Full-day workshop

Form

• We plan an on-site event but would consider remote connections for attendees/speakers who cannot join the venue.

Organizers

- ● Roberta Bevilacqua, IRCCS-INRCA, Italy
- ● Laura Fiorini, University of Florence, Italy
- ● Francesca Fracasso, CNR-ISTC, Italy
- ● Alessandro Umbrico, CNR-ISTC, Italy

Description and objectives

Increased life expectancy is an achievement of modern societies in the Organization for Economic Co-operation and Development, OECD Countries (and recently in developing Countries) thanks to the technological progress in health, living places, and quality of food. An aggregate consequence of the prolongation of the life span is the growth of an aging society, as testified by several demographic studies. The study of the consequences of an aging society on the future of social living has recently been considered by large world institutions (WHO, UN, EU, etc), which addressed and designed programs for social and technological development taking into account the impact of the aging society in the future of the world.

Within this framework, topics such as "prolonging independent living", "aging well", active and healthy aging, or "social inclusion" are increasingly becoming more and more relevant. The incidence and prevalence of chronic diseases during aging impose the need for innovative approaches to assistance, including the ability of self-management, which has become an increasingly important requirement of healthcare in Europe and beyond. Being able to self-manage one's own health requires high levels of health literacy and continuous collaboration between persons- carers and health professionals. In order for people to manage health on a long-term basis, they need to be able to understand and assess health-related information to make informed decisions. They need to be able to collaborate closely with healthcare professionals, ask the right questions and take control of their circumstances related to their health condition. Hence, innovative interventions embedded

with e-health applications are extremely important to improve the Active and Healthy aging of the population and health literacy of this population.

Several initiatives all over the world took care of these aspects focusing on the problem of developing a new generation of innovative technologies to face an aging society and its growing needs. Novel assistive solutions and technologies are indeed necessary to properly deal with the increasing demand for personalized assistance and to support multiple users in different scenarios. Such solutions should be capable of effectively merging heterogeneous and potentially conflicting requirements coming from different stakeholders bridging the gap between the health needs of users and clinical and social requirements. In this context, the increasing demand for personalized, continuous, and adaptive assistance from an aging population can be effectively addressed only through a multidisciplinary approach. The synergetic contribution of different research areas e.g., Artificial Intelligence (AI), Internet-of-Things (IoT), Robotics, and Social Science is crucial for delivering innovative and impactful results and technologies.

Audience and plans to solicit participation

The workshop aims to collect contributions from experts (scholars, researchers, Ph.D. students as well as practitioners) in Artificial Intelligence and Robotics and other crossing disciplines involved in the development of innovative and effective research and technologies for the aging society and assistance in general. The workshop will pursue a multi-disciplinary approach by collecting knowledge and experiences from heterogeneous disciplines and also experiences from stakeholders in order to show how efforts from technological and non-technological actors would add value to the promotion of innovative assistive systems. Participation in the workshop will be solicited through the workshop website (http://altruist21.istc.cnr.it/) and dedicated social channels. In this regard, we have created a Twitter/X profile (https://twitter.com/altruist_ws) we use for dissemination and advertising news/events about the workshop (the profile counts 56 followers currently). Call for papers, events, and invited speakers will be distributed through the thematic channels of the workshop and mailing lists of AI and Robotics research communities (e.g., robotics-worldwide, EUCOG, euRobotics, etc). Furthermore, we will define a program committee with highly expert researchers and select keynote and invited speakers suitable to create interest in a wide audience and reflect the pursued multi-disciplinary view.

Topics

- Cognitive Robotics
- Social-Aware and User-Aware Interaction
- Cultural-Awareness Human-Robot Interaction
- Personalized and Adaptive Robotic Assistance
- Activity monitoring systems (indoor and outdoor)
- Object and Activity Recognition
- Trustworthy Social Robots
- Explainable AI with Social Robots
- Co-Design of Assistive Solutions
- Mixed-Initiative Interaction
- Ethical Issues in Social Robotics for aging Society

- AI Techniques Applied to Assistive Scenarios
- Evaluation methodologies and experiences for social robots
- Multi-modal perception and human behavioral modeling
- other related topics

Invited Speakers

We plan to have at least two invited speakers for a full-day workshop. Currently, we have the agreement for the following invited:

- Silvia Rossi, University Federico II, Italy
- Naomi Fitter, Oregon State University, USA

We are contacting researchers covering a selection of topics spanning from technological perspectives to health/social care perspectives. Here is a list of other possible candidates: Francesco Ferro (PAL Robotics, Spain), Toshimi Ogawa (Tohoku University, Japan), Chieko Asakawa (IBM Research, USA), Sebastian Glende (YOUSE, GE), Samuel Benveniste (Broca Hospital, France), Henk Nap Herman (Vilans, The Netherlands), Pramida Caleb-Solly (University of Nottingham, UK), Giulia Barbareschi (Keio University, Japan), Giulia Perugia (Eindhoven University, The Netherlands), Cynthia Matuszek (University of Maryland Baltimore County, USA).

Researchers who joined the Program Committee of the past editions of the workshop are the following:

- Antonio Andriella, PAL Robotics
- Iman Awaad, Hochshule Bonn-Rhein-Sieg University
- Gloria Beraldo, CNR-ISTC
- Riccardo De Benedictis, CNR-ISTC
- Gabriella Cortellessa, CNR-ISTC
- Alessandro Leone, CNR-IMM
- Andrea Orlandini, CNR-ISTC
- Filippo Palumbo, CNR-ISTI
- Matteo Palpacelli, Università Politecnica delle Marche
- Marta Romeo, University of Manchester
- Silvia Rossi, University of Naples Federico II
- Alessandra Sorrentino, University of Florence
- Mariacarla Staffa, University of Naples Parthenope

Additional Information

Partnership and correlated event

- This workshop is organized in conjunction with
  - Fit4MedRob - Ministry of the University and Research under the Piano Nazionale per gli Investimenti Complementari PNC-PNRR Fit for Medical Robotics (Fit4MedRob), CUP: B53C22006950001.

- ○ Pilots for Healthy and Active Aging - Pharaon Project, European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 857188. https://www.pharaon.eu
  - ○ European-Japanese Virtual Coach for Smart aging - e-VITA Project, European Union's Horizon 2020 Research and Innovation Programme in cooperation with the Japanese Ministry of Internal Affairs and Communication (MIC), under Grant Agreement No 101016453. https://www.e-vita.coach/
- We plan to publish selected papers in high-quality journals e.g., the International Journal of Social Robotics, Journal of Ambient Intelligence and Humanized Computing, Frontiers in Robotics & AI, or other selected ISI journals.

Experience

This is the third edition of the workshop. The first edition was held during ICSR 2021 (http://altruist21.istc.cnr.it) and was organized by Roberta Bevilacqua (INRCA-IRCCS), Gabriella Cortellessa (CNR-ISTC), Laura Fiorini (UniFi), Alessandro Umbrico (CNR-ISTC) and Rainer Wieching (University of Siegen). This edition received a total number of 9 submissions and hosted two keynote speakers (Mark Neerincx from TU Delft, and Astrid Weiss from TU Wien). Furthermore, it was associated with a Special Issue in the International Journal of Social Robotics (SORO), guest-edited by the same organizers of the workshop. The second edition was held during ICSR 2022 and was organized by Roberta Bevilacqua (INRCA-IRCCS), Francesca Fracasso (CNR-ISTC), Laura Fiorini (UniFi), Alessandro Umbrico (CNR-ISTC) and Rainer Wieching (University of Siegen). This edition hosted three keynote speakers (Prof. Kristiina Jokinen from AIST Tokyo/University of Helsinki, Prof. Alessandro Di Nuovo from Sheffield Hallam University, and Prof. Oliver Korn from Offenburg University) and collected a total of 10 submissions that were published on CEUR-WS under AI*IA series - https://ceur-ws.org/Vol-3323.

Information about all editions of ALTRUIST can be found at http://altruist.istc.cnr.it.

Submission

Increased life expectancy is an achievement of modern societies thanks to the technological progress in health, living places, and quality of food. One of the consequences of an aging society is the growing incidence of chronic diseases. This trend imposes the need for innovative approaches to assistance, including the ability of self-management, which has become an increasingly important requirement of healthcare in Europe and beyond. Innovative interventions embedded with e-health applications are extremely important to improve the Active and Healthy aging of the population. Novel technological solutions should be capable of effectively merging heterogeneous and potentially conflicting requirements coming from different stakeholders bridging the gap between the health needs of users and clinical and social requirements. Such a challenging objective can be achieved only through a multidisciplinary approach. This workshop, therefore, aims to push the synergetic contribution of different research areas e.g., Artificial Intelligence (AI), Internet-of-Things (IoT), Robotics, and Social Science to develop innovative and effective research and technologies for the aging society and assistance in general.

- Paper submission deadline: 25/11/2022

- Paper format:
  - Long abstract: 4 pages formatted as LNCS one-column paper
  - Camera-ready:
    - Short paper: 6 pages formatted as LNCS one-column paper
    - Long paper: 10 pages formatted as LNCS one-column paper
- Workshop proceedings: We plan to publish workshop proceedings on CEUR-WS
- Workshop website URL: http://altruist.istc.cnr.it
- List of (some) relevant topics: Cognitive Robotics; Socially-Aware and User-Aware Interaction; Cultural-Awareness Human-Robot Interaction; Personalized and Adaptive Assistance; Activity Monitoring Systems (indoor and outdoor); Trustworthy Social Robots; Explainable AI with Social Robots; Action research in Social Robotic; Mixed-Initiative Interaction