Special Issue on Robots for Future Societies: Evaluating Social Acceptance and Societal Impact of Robots

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Human-Robot Interaction research enters new areas of interest, besides technical developments and engineering approaches. The interest in the roles robots can possibly play in future societies steadily grows. Topics like acceptability, ethics, and sustainability become more and more spotlighted when studying social robots. Questions arise like: what makes a robot socially accepted (long-term), what are the societal implications of integrating robots into education, working or health contexts etc. All these topics will be addressed in this special issue. In this special issue, topical research will be presented on how socially acceptable robotic systems should be designed, developed, and assessed and what societal impact robots could have in the future. A combination of reviews on existing measures and metrics for the assessment of social acceptance, structural frameworks towards social and societal acceptance, and endings from Human-Robot Interaction studies will be discussed. Moreover, key challenges (and possible ways to address some of them) social robots pose in terms of technological, design-orientated, and user-centered aspects will be highlighted. All articles in this special issue underline the importance of taking the aspect of social acceptability in social robotics research into account and place emphasis on how to integrate social acceptability into research projects.

In the first article “Review of human studies methods in HRI and recommendations”, Cindy L. Bethel and Robin R. Murphy present a thorough survey on research methods for

human studies in social robotics. They describe the application of these methods with its advantages and disadvantages in detail and underline the challenges in human studies in HRI. Based on case studies they give recommendations for other researchers on how to generate valid data in human studies with social robots.

The second article “Assessing acceptance of assistive social agent technology by older adults: the Almere model”, written by Marcel Heerink, Ben Kröse, Vanessa Evers and Bob Wielinga, presents a statistically validated acceptance model especially suited for evaluating interaction of elderly users with socially interactive systems. It is based on the Technology Acceptance Model (TAM) and was extended by relevant factors, which were identified in several user studies with elderly participants. Therefore, the Almere model offers other researchers theoretical and methodological grounding for HRI studies with elderly participants.

The next article “Expressing emotions with the social robot Probo”, written by Jelle Saldien, Kristof Goris, Bram Vanderborght, Johan Vanderfaeillie, and Dirk Lefeber, describes the development of the socially interactive robot Probo. Probo is a huggable animal-like robot, especially designed to suit the needs of children. The article describes the robot’s abilities to show emotional states based on Russell’s circumplex model of affect and discusses the results of several user studies on the recognition of the underlying emotions. Thereby, the article shows how affective design can improve the social acceptability of a robotic platform.

Similarly, the article of Karla Conn Welch, Uttama Lahiri, Nilanjan Sarkar, and Zachary Warren, entitled “An approach to the design of socially acceptable robots for children with autism” presents how experiments with virtual social robots can contribute towards the development of future social robots for children suffering from Autism Spectrum Disorders (ASD). Therefore, the authors propose a virtual

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