Editorial

Shuzhi Sam Ge¹ · Oussama Khatib²

Published online: 24 November 2018
© Springer Nature B.V. 2018

For this issue, we are honored to introduce a collection of ten papers which covers a wide range of exciting topics in social robotics.

The first work “Preliminary Results on Reducing the Workload of Assistive Vehicle Users: A Collaborative Driving Approach” (by Eduardo González and Fernando A. Auat Cheein) proposes a collaborative navigation strategy for improving users’ skills for driving assistive vehicles and presents four navigations modes. The results show that the system aids users to perform navigation tasks in a clear and compliant manner using a robotic assistive vehicle and decreases their workload.

In the second paper “The Effects of Humanlike and Robot-Specific Affective Nonverbal Behavior on Perception, Emotion, and Behavior” by Astrid M. Rosenthal-von der Pütten, Nicole C. Krämer and Jonathan Herrmann, the authors present a review on affective nonverbal behaviors in robots and experimentally tested the influence of humanlike (affective) nonverbal behavior (HNB) and robot-specific nonverbal behavior (RNB) (colored LEDs) on users’ perception of the robot, their emotional experience, and self-disclosure. The results suggest that HNB is more effective in transporting the robot’s communicative message than RNB.

In the third work on “Multiple-Robot Conversational Patterns for Concealing Incoherent Responses” by Tsunehiro Arimoto, Yuichiro Yoshikawa and Hiroshi Ishiguro, the authors propose to use multiple robots in a conversation, in which even an actually irrelevant, sudden topic shift sounds involving possible relevance to be shared with subjects in the ongoing conversation. An experiment is conducted to verify the proposed method and the authors discuss a new disruption-tolerant conversational system design using multiple robots based on the experimental results.

The fourth paper is “Developing Joint Attention for Children with Autism in Robot-Enhanced Therapy” by Daniel O.

David, Cristina A. Costescu, Silviu Matu, Aurora Szentagothai and Anca Dobrean. In this paper, a research is conducted to investigate if the joint attention performance of autism spectrum disorder children is dependent on the social cues that the robot uses in the therapy sessions. The findings emphasize the importance of using more cues, such as pointing, for increasing engagement and performance engagement in a child–robot interaction session.

The fifth work is “Assistive Robotic Technology to Combat Social Isolation in Acute Hospital Settings” by Miguel Sarabia, Noel Young, Kelly Canavan, Trudi Edginton, Yiannis Demiris and Marcela P. Vizcaychipi. The authors introduce a remotely operated NAO humanoid robot which conversed, make jokes, played music, danced and exercised with patients in a London hospital. The results indicate that hospital patients enjoy socializing with robots, opening new avenues for future research into the potential health benefits of a social robotic companion.

The sixth paper is “Supporting Human Autonomy in a Robot-Assisted Medication Sorting Task” by Jason R. Wilson, Nah Young Lee, Annie Saechao, Linda Tickle-Degnen and Matthias Scheutz. In this paper, the authors explore the role of a socially assistive robot for one aspect of medication management: sorting, propose a human-centric approach towards the design of a robot assisting in a medication sorting task, and develop two robot prototypes. It is found that greeters of the physical robot give a lower emotional rating of the interaction, whereas greeters of the virtual robot find the emotion of the experience to be better than the non-greeters.

The seventh paper “Factors Affecting the Acceptability of Social Robots by Older Adults Including People with Dementia or Cognitive Impairment: A Literature Review” (by Sally Whelan, Kathy Murphy, Eva Barrett, Cheryl Krusche, Adam Santorelli and Dymna Casey) reviews empirical studies which have explored how acceptability issues impact older adults (OA), people with dementia and OA with mild cognitive impairment, to identify the factors governing acceptability, to ascertain what is likely to improve acceptability and make recommendations for future research.

✉ Shuzhi Sam Ge
samge@nus.edu.sg

¹ National University of Singapore, Singapore, Singapore

² Stanford University, Stanford, USA

The eighth work “Design and Impact of a Teacher Training Course, and Attitude Change Concerning Educational Robotics” (by Emanuela Castro, Francesca Cecchi, Pericle Salvini, Massimiliano Valente, Elisa Buselli, Laura Menichetti, Antonio Calvani and Paolo Dario) presents a training course on Educational Robotics (ER), grounded in pedagogical insights, and discusses the results of the course and teacher’s opinion about ER in terms of: (1) teachers’ attitudes and perceptions of using ER; (2) the potential impact of ER on students’ key competences for lifelong learning; and (3) strengths and weaknesses of ER. New directions for future research in ER are also discussed based on the training results.

The following paper, “Age- and Gender-Based Differences in Children’s Interactions with a Gender-Matching Robot” (by Anara Sandygulova and Gregory M. P. O’Hare), investigates the responses of children whether synthesized voice evokes gender associations in children, and children’s preferences for robot’s gender. The results indicate

that young children (ages 5–8) are not able to successfully attribute gender to the robot and indicate their preference with a matching gender while there was no difference in preferences for a robot’s gender by older children (ages 9–12).

In the last paper, “Model of Dual Anthropomorphism: The Relationship between the Media Equation Effect and Implicit Anthropomorphism” (by Jakub Złotowski, Hidenobu Sumioka, Friederike Eyssel, Shuichi Nishio, Christoph Bartneck and Hiroshi Ishiguro), the authors manipulate both participants’ motivation for reflective processing and a robot’s emotionality to investigate the role of intuitive process versus reflective processing in forming judgments about the robot Robovie R2. The results suggest that the model of dual anthropomorphism can explain when responses are likely to reflect judgments based on intuitive and reflective processes.

Publisher’s Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.