



Editorial

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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 “Multi-party Turn-Taking in Repeated Human–Robot Interactions: An Interdisciplinary Evaluation” (by Mateusz Żarkowski) presents the methodology, setup and results for experiment involving the social robot EMYS participating in multi-party interaction where pairs of participants interacted with the robot in a trivia questions game lead by the robot. The results show that the robot adhering to human turn-taking social norms reduced the number of occurring conversational errors. In addition, it made the robot perceived as more communicative, cooperative and fitting user expectations.

In the second paper “Human–Robot Collaboration Acceptance Model: Development and Comparison for Germany, Japan, China and the USA” (by Christina Bröhl, Jochen Nelles, Christopher Brandl, Alexander Mertens and Verena Nitsch), work aims at presenting a human–robot collaboration acceptance model (HRCAM) with regard to the collaboration between humans and robots that is based on prior acceptance models, while also considering technology affinity and ethical, legal and social implications. The HRCAM additionally shows which variables influence perceived usefulness and perceived ease of use, and thus behavioral intention to use and use behavior. On the basis

of above work, this model offers practitioners in the field of human–robot collaboration recommendations to increase the acceptance of robots.

In the third work on “Perceived Mistreatment and Emotional Capability Following Aggressive Treatment of Robots and Computers” (by Zachary Carlson, Louise Lemmon, MacCallister Higgins, David Frank, Roya Salek Shahrezaie and David Feil-Seifer), people examines perceived mistreatment directed towards a robot in comparison to a computer which provides some understanding of how people feel about robots in collaborative social settings. The final results supported authors’ hypotheses that the participants observed greater mistreatment for the robot, but not the computer. Participants also felt significantly more sympathetic towards the robot and believed that it was much more emotionally capable.

The fourth paper is “Could Social Robots Make Us Kinder or Crueller to Humans and Animals?” (by Simon Coghlan, Frank Vetere, Jenny Waycott and Barbara Barbosa Neves). Concentrating on robot animals, this paper examines strengths and weaknesses on both sides of the argument that social robots will have virtue-promoting or vice-promoting effects regarding our treatment of living beings. It finds there is some reason for thinking that social robots may causally affect virtue, especially in terms of the moral development of children and responses to nonhuman animals. This conclusion has implications for future robot design and interaction.

The fifth work is “Robot-Based Motor Rehabilitation in Autism: A Systematic Review” (by Melanie Jouaiti and Patrick Hénaff). It dedicate our review to motor rehabilitation in autism, notably using robots. Through searching the PubMed, IEEE, PsycNet and Science Direct databases, it show that although this research is promising, it has been neglected and would benefit from more consideration. The goal of this review is to highlight the relevance of past work and insist on the dire need to develop this research.

The six paper is “Imitation of Human Motion by Low Degree-of-Freedom Simulated Robots and Human Preference for Mappings Driven by Spinal, Arm, and Leg Activity” (by Roshni Kaushik and Amy LaViers). This paper

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presents a methodology for mapping human motion capture data to the motion of a low-DOF simulated robot. Experimental results re-confirm the ability for simple robots to imitate human behavior and indicate that monitoring human spinal activity may be especially useful in this pursuit. Parallel work in psychology and human behavior analysis suggests that successful imitation of the motion of human counterparts is a necessary activity for robots to integrate in human-facing environments.

The seventh paper is “A Hybrid Joint/Cartesian DMP-Based Approach for Obstacle Avoidance of Anthropomorphic Assistive Robots” (by Clemente Lauretti, Rrancesca Cordella and Loredana Zollo). Objective of this work is to propose a new formulation of the learning by demonstration approach based on dynamic movement primitives (DMPs), called hybrid joint/Cartesian DMPs, for redundant robots with the twofold purpose of avoiding obstacles on the path and obtaining anthropomorphic motion in the joint as well as the task space. Through the questionnaire, this work shows that the users feel more comfortable and less nervous to interact with a robot that moves in human-like manner.

The eighth work “Culture as a Sensor? A Novel Perspective on Human Activity Recognition” (by Ting-Chia Chiang, Barbara Bruno, Roberto Menicatti, Carmine Tommaso Recchiuto and Antonio Sgorbissa) proposes the association and enhancement of the sensory data analysis with cultural information that can be seen as an estimate of person-specific information, relieved of the burden of a long/complex setup phase. Experiments performed offline and online, using images acquired by a mobile robot in an apartment, show that the culture-aware HAR system consistently outperforms the culture-unaware HAR system.

The following paper, “On-the-Fly Detection of User Engagement Decrease in Spontaneous Human–Robot Interaction Using Recurrent and Deep Neural Networks” (by Atef Ben-Youssef, Giovanna Varni, Slim Essid and Chloé Clavel). Authors discuss the detection of a decrease of engagement by users spontaneously interacting with a socially assistive robot in a public space. In order to detect user engagement decrease in real-time, the use of deep learning techniques (recurrent and deep neural networks) is investigated. Experimental results of this work highlight the relevance of taking into account the temporal dynamics of a user’s behavior. Allowing 1–2 s as buffer delay improves the performance of taking a decision on user engagement.

In the last paper, “The Religious Impacts of Taoism on Ethically Aligned Design in HRI” (by Yueh-Hsuan Weng, Yasuhisa Hirata, Osamu Sakura and Yusuke Sugahara), authors focus assessing robot performance and appropriateness for different applications, and for employment across countries with different cultural backgrounds. The objective of this article is to analyze what impacts Taoist religion may have on the use of Ethically Aligned Design in future human–robot interaction.

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