Editorial

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On this happy occasion, the first decade after the successful launch of International Journal of Social Robotics (SORO), we are pleased to open the 11th volume of SORO for the year of 2019.

At the beginning, it gives us great pleasure to announce that our journal, the International Journal of Social Robotics, has a high scientific impact of 2.009. After 10 years of joint effort and collaboration of the social robotics community, social robotics has already become a tremendously remarkable topic on a global scale. At this moment, we not only recognize the conveniences brought by the development of them for our lives, but also are well prepared to face the challenges that come with it. Accompanied with supporting the communication of the innovative achievements in social robotics, human–robot interaction, and artificial intelligence, we will continue to encourage the prudential considerations on the harmonious coexistence between robots and human in the second decade. For the application of social robots, we advocate not only embracing them, cooperating with them, but also scientific approaches in studying a whole variety of aspects related to social robots and human–robot interaction. We need to keep learning to adapt to their rapid development.

The Editor-in-Chiefs of SORO, Shuzhi Sam Ge and Oussama Khatib, would like to express their sincere gratitude to all members of the International Advisory Board, the Associate Editors, the Editors at Springer, the Editorial Assistants, the authors, and the reviewers for their continuous support, advice and contributions. In this upcoming year, the editorial board will continue to be devoted to managing the journal in

a highly professional and efficient manner, provide authors with prompt, effective and adequate feedbacks, and make our community more supportive, constructive and scientifically strong.

This year the editorial board has expanded to include a new Editor-in-Chief: Professor Agnieszka Wykowska, from Italian Institute of Technology in Genova. Professor Wykowska's background is in cognitive neuroscience (Ludwig-Maximilian University Munich, Germany) and philosophy (Jagiellonian University, Cracow, Poland), her Ph.D. is in psychology (Ludwig Maximilian University Munich), and she now leads the team “Social cognition in human–robot interaction” at the Italian Institute of Technology, Genova, Italy. Prof. Wykowska has worked in the area of social robotics and HRI since 2010. Professor Wykowska has been serving as an Associate Editor for our journal for over 5 years, and she has also been one of the most frequent attendees, supporters and contributors of the International Conference on Social Robotics (ICSR). On behalf of our community, Professor Ge and Professor Khatib would like to extend a warmly welcome to Professor Agnieszka Wykowska, and appreciate her willingness to assist us in speeding up the review process, ensuring the quality of publication, and being in touch of the European community. We would also like to welcome Dr. Xuewei Mao and Dr. Jairo Pérez-Orsorio, who will also join our community from this year and will serve as Editorial Assistants. Dr. Mao holds a bachelor degree and a master degree of Measuring and Controlling Technologies and Instruments from Tianjin University, China, and a Ph.D. degree in Mechanical Systems Engineering from Nagoya University, Japan. Dr. Pérez-Orsorio holds a master's degree in Psychology (National University of Colombia, Bogotá) and Neuro-cognitive Psychology (Ludwig Maximilian University Munich (LMU), Germany). He obtained his Ph.D. in Systemic Neurosciences (LMU), and now works in the team of Prof. Wykowska at the Italian Institute of Technology, Genova.

The tenth edition of ICSR was successfully held in Qingdao, China, on 28–30, November 2018, thanks to the leadership by General Chairs: Shuzhi Sam Ge and

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John–John Cabibihan, Program Chairs: Miguel Salichs, Elizabeth Broadbent, Hongsheng He, Local Arrangement Chairs: Jihui Zhang, Dongjie Zhao, Xuwei Mao, Xin Liu, Registration Chairs: Yinhua Liu, Xiangxia Wei. Publicity Chairs: José Carlos Castillo, Silvia Rossi, Yinlong Zhang, Ho Seok Ahn, Jianbo Su, Competitions Chairs: Amit Kumar Pandey, Ali Meghdari, Workshop Chair: Emilia Barakova; Steering Committee: Dongwei Xia. We would also like to thank all members in the Standing Committee and the International Program Committee, all editors and reviewers. The ICSR 2018 brought together researchers and practitioners working on the interaction between humans and robots and on the integration of robots into our society, under the theme “Social Robotics and Artificial Intelligence”. The ICSR 2019 will be held in Madrid, Spain. We look forward to meeting you there!

According to data from Web of Science, the papers which have been cited more than twenty times within the last three years are as follows (as of Dec. 2018). We congratulate the authors on their insightful and well-recognized research work.

1. Rios-Martinez, Jorge, Anne Spalanzani, and Christian Laugier. “From proxemics theory to socially-aware navigation: A survey.” *International Journal of Social Robotics* 7.2 (2015): 137–153. (34 cites)
2. Kennedy, James, Paul Baxter, and Tony Belpaeme. “Comparing robot embodiments in a guided discovery learning interaction with children.” *International Journal of Social Robotics* 7.2 (2015): 293–308. (27 cites)
3. Złotowski, Jakub, et al. “Anthropomorphism: opportunities and challenges in human–robot interaction.” *International Journal of Social Robotics* 7.3 (2015): 347–360. (25 cites)
4. Alemi, Minoo, Ali Meghdari, and Maryam Ghazisaedy. “The impact of social robotics on L2 learners’ anxiety and attitude in English vocabulary acquisition.” *International Journal of Social Robotics* 7.4 (2015): 523–535. (21 cites)
5. Anzalone, Salvatore M., et al. “Evaluating the engagement with social robots.” *International Journal of Social Robotics* 7.4 (2015): 465–478. (21 cites)
6. Royakkers, Lambèr, and Rinie van Est. “A literature review on new robotics: automation from love to war.” *International Journal of Social Robotics* 7.5 (2015): 549–570. (20 cites)

For this January issue, we are pleased to introduce a collection of twelve papers which cover a wide range of exciting topics in social robotics:

The first paper titled “Social Robots and Seniors: A Comparative Study on the Influence of Dynamic Social Features on Human–Robot Interaction” by Christina Moro, Shayne

Lin, Goldie Nejat, Alex Mihailidis examined the impact of dynamic social features of the robot (such as facial expressions and gestures) on interaction experience of cognitively impaired elderly users. The results showed that expressive dynamic features increased engagement and positive affect.

The second paper “The Background Context Condition for the Uncanny Valley Hypothesis” by Pawel Lupkowski, Marek Rybka, Dagmara Dziedzic, Wojciech Włodarczyk focused on the uncanny valley effect with respect to 3D models presented in two different contexts. The authors found differences in comfort level, and emotional reaction for single models, dependent on the different contexts, suggesting that various factors might influence the uncanny valley phenomenon.

Third contribution “Estimating Children’s Social Status through their Interaction Activities in Classrooms with a Social Robot” by Tsuyoshi Komatsubara, Masahiro Shiomi, Thomas Kaczmarek, Takayuki Kanda, Hiroshi Ishiguro reports a novel method for estimating children’s social status with the use of a social robot, its cameras and analyses of children’s social behavior in a classroom. This is a novel approach for addressing an important factor in education, namely the estimation of a social status of pupils.

Fourth paper “Softness, Warmth, and Responsiveness Improve Robot Hugs” by Alexis E. Block and Katherine J. Kuchenbecker is dedicated to a study which evaluated users’ responses to physical contact with a robot via a hugging behavior initiated by the robot. Participants preferred warm and soft hugging robot over cold and hard robot and duration of hug also played a role in perceived socialness of the robot. The paper highlights the importance of studying specific parameters affecting acceptance of various behaviors, including also physical contact.

The subsequent contribution “Investigating the Effect of a Humanoid Robot’s Head Position on Imitating Human Emotions” by David O. Johnson and Raymond H. Cuijpers addressed the issue of head position in expressing emotions by robots. In an online survey participants adjusted head position of a robot to express basic emotions. The study shows that head orientation is an important signal in expressing emotions.

The sixth paper of this volume is titled “Human Understanding of Robot Motion: The Role of Velocity and Orientation” and authored by Frank Papenmeier, Meike Uhrig and Alexandra Kirsch. The paper reports a study in which robot motion was evaluated with respect to its velocity profile and orientation. Subjective ratings were supplemented with the objective measure of viewing time. The study showed that velocity profiles affected comprehensibility of robot behavior, as measured by viewing times, while robot’s orientation influenced perceived autonomy, as measured by subjective ratings.

The following paper “SAM, an assistive robotic device dedicated to helping persons with quadriplegia: Usability study” by Charles Fattal, Violaine Leynaert, Isabelle Laffont, Axelle Baillet, Michel Enjalbert, Christophe Leroux reports a usability case study of a prototype device SAM consisting of a robotic arm mounted on a mobile base. Patients with quadriplegia evaluated SAM through tasks in which the arm picked up various objects. The users showed a general appreciation for the approach, indicating a need for such solutions, despite the fact that SAM is still not ready for implementation in real life situations.

The eighth contribution to this issue, titled “Impacts of Visual Occlusion and its Resolution in Robot-Mediated Social Collaborations” by Sina Radmard, AJung Moon, and Elizabeth Croft addressed the issue of visual occlusions during remote collaboration in telepresence. The paper highlights that occlusions introduce disturbing interference and deteriorate task performance. The proposed autonomous occlusion resolution is a promising avenue for improving the telepresence experience.

The ninth paper “Hierarchical Human Machine Interaction Learning for a Lower Extremity Augmentation Device” by Likun Wang, Zhijiang Du, Wei Dong, Yi Shen, and Guangyu Zhao describes a model-free exoskeleton solution which plans the motion of the exoskeleton with the sequence of rhythmic movement primitives. With this approach, promising results have been obtained in tests on single-leg exoskeleton platform as well as on a lower extremity augmentation device.

The following paper “Investigation of Causal Relationship Between Touch Sensations of Robots and Personality Impressions by Path Analysis” authored by Yuki Yamashita, Hisashi Ishihara, Takashi Ikeda and Minoru Asada investigated how touch influences human’s impressions of the personality of a robot. Authors used a factor and path analyses in order to identify the factors for touch sensations and personality impressions. This systematic analysis revealed that different materials produce different personality impressions on the same robot.

The eleventh paper titled “Human-Like Motion Planning Based on Game Theoretic Decision Making” and authored by Annemarie Turnwald and Dirk Wollherr proposes a navigator planner that models human-like decision making hinged on non-cooperative game theory. The paper evaluates whether humans can differentiate human from artificial motions with two Turing-like experiments. This type of model planner seems to be promising, as participants did not perceive differences between human-like and game theory motion planners.

The twelfth paper of this issue “Communication Support via a Tele-Operated Robot for Easier Talking: Case/Laboratory Study of Individuals with/Without Autism Spectrum Disorder” by Jiro Shimaya, Yuichiro Yoshikawa, Hirokazu Kumazaki, Yoshio Matsumoto, Masutomo Miyao, and Hiroshi Ishiguro showed that the presence of a tele-operated robot helps individuals with ASD to establish conversations. In addition, the authors reported that this facilitation extends to conversations with a third person (caregiver or teacher) in the room. The paper highlights the potential applications of this semi-indirect form of communication in therapeutic and educational contexts.

The last paper titled “User-Adaptive Interaction in Social Robots: A Survey Focusing on Non-physical Interaction” by Gonçalo S. Martins, Luís Santos, and Jorge Dias provides an overview of social robots that obtain information from the user to adapt to their needs without using physical interaction. The review not only explores the scientific aspect and technological maturity of the field but also proposes a taxonomy for the classification for future works. In addition, the paper exposes technological challenges and opportunities in the field.

In summary, this issue presents papers addressing a wide variety of topics—from social touch, dynamic expressive features, and elderly care to teleoperation and robotic augmentation devices. We hope that the readers of this issue will enjoy this variety, and that this collection of articles will further inspire highly interdisciplinary research in the field of social robotics.

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