IEEE ICRA 2019

Workshop on Physical human-robot interaction: a design focus

May 24, 2019

PROGRAM

8:30- 9:00	Opening session*: Challenges in Physical Human-Robot Interaction* Clément Gosselin, Université Laval, Canada
9:05- 9:40	Flash presentations (4 minutes per paper) 1. *On the design of lightweight compliant wearable arms*, J. Denis, C. Véronneau, L.-P. Lebel, M. Denniger, J.-S. Plante and A. Girard, Université de Sherbrooke, Canada 2. *Physical human-robot interaction with a backdrivable (6+3)-dof parallel mechanism,* L.T. Schreiber, T.S. Nguyen and C. Gosselin, Université Laval, Canada 3. *Towards collaborative robots with sensory awareness: preliminary results using multi-modal sensing*, A.L. Orekhov, G.L.H. Johnston, C. Abah, H. Choset and N. Simaan, Vanderbilt University and Carnegie Mellon University, USA 4. *A kinematically redundant hybrid robot for low-impedance physical human-robot interaction*, K. Wen, T.-S. Nguyen, D. Harton, T. Laliberté and C. Gosselin, Université Laval, Canada 5. *A cable-driven robotic arm powered by magnetorheological clutches for upper-limbs physical interaction in virtual reality environment*, L.-P. Lebel, B.-P. Busque, G. Julio, M. Denniger, A. Girard and J.-S. Plante, Université de Sherbrooke, Canada 6. *Lightweight multi-degree-of-freedom displacement-sensing link shells for safe and intuitive physical human-robot interaction*, G. Boucher, T. Laliberté and C. Gosselin, Université Laval, Canada 7. *Parameter adaptation in admittance control for stable physical human-robot interaction*, F. Ferraguti, C. Talignani Landi, L. Sabattini, M. Bonfè, C. Fantuzzi and C. Secchi, University of Modena and Reggio Emilia, Italy. 8. *A grasp manipulation selection chart to pick-up objects lying on hard surfaces*, V. Babin and C. Gosselin, Université Laval, Canada
9:40-10:00	Poster/demo session
10:00-10:15	Coffee Break
10:15-11:00	Poster/demo session (continued)
11:00-11:30	Invited presentation: *Open Source Technologies for Soft Robots: Design for Simplicity, Performance, and Robustness of Robots for Interaction with Humans* Manuel Catalano, University of Pisa, Italy
11:30-12:00	Invited presentation: *Product design and evaluation through interactive digital human and humanoid* Eiichi Yoshida, National Institute of Advanced Industrial Science and Technology, Japan
12:00-13:30	Lunch Break
13:30-14:00	Invited presentation: *The uMan Assist: Underactuated Manipulation for Collaborative Robotics* Muhammad Abdallah, General Motors Company, USA
Continued on next page	

14:05- 14:40	Flash presentations (4 minutes per paper) 1. *Compliant 5-dof robot: Mechanical design*, S. Pisetskiy and M.R. Kermani, University of Western Ontario, Canada 2. *What dynamics should impedance-controlled robots render?,* K. Haninger, A. Bastidas-Cruz, and D. Surdilovic, Fraunhofer Institut für Produktionsanlagen und Konstruktionstechnik, Germany 3. *A methodology to formulate user requirements for designing collaborative robots*, A.-M. Macovetchi, F. Kirstein, Z. Doulgeri, and F. Dimeas, Blue Ocean Robotics, Denmark and Aristotle University of Thessaloniki, Greece 4. *Collaborative camera-holder robotic system for minimally invasive surgery,* J. Sandoval, M.A. Laribi and S. Zeghloul, University of Poitiers, France 5. *Safety intelligent sensor for cobot: V2SOM, New device for rotary joints,* Y. Ayoubi, M.A. Laribi, S. Zeghloul and M. Arsicault, University of Poitiers, France *6. Augmented reality based visual force feedback for physical human-robot interaction*, M. Schönheits, German Aerospace Centre (DLR), Germany 7. *Mechanical solutions to variable stiffness robotic arms*, X. Zeng, T. Morrison and H.-J. Su, Ohio State University, USA. 8. *Vibrotactile communication for bilateral haptic cooperation with soft grippers,* G. Salvietti and D. Prattichizzo, Instituto Italiano di Tecnologia, Italy
14:40-15:00	Poster/demo session
15:00-15:15	Coffee Break
15:15-16:00	Poster/demo session (continued)
16:00-16:30	Invited presentation: *HRI for assisted tele-manipulation: combining autonomous grasp planning with haptic cues* Maxime Adjigble, University of Birmingham, UK
16:30-17:00	Closing session: *The Programmable Permanent Magnet Actuator: A Paradigm Shift in Efficiency for Low-Speed Torque-Holding Robotic Applications* Vincent Duchaine, École de Technologie Supérieure, Canada