Ergonomic Human-Robot Collaboration: Opportunities and Challenges - Discussion

Wansoo Kim, Luka Peternel, Arash Ajoudani, and Eiichi Yoshida

The questions we want to address:

- How to clearly define the measures for ergonomics in human-robot collaboration?
- Are the proposed ergonomic measures sufficient to ensure ergonomic conditions and prevent work-related injuries in terms of bio-medical aspects?
- How to improve the existing modelling of the human and effectively apply it to achieve ergonomic human-robot collaboration?
- Learning algorithms may help the robot to overcome some of the above-mentioned issues.
- What kind of additional sensory feedback systems are required?
- How can robot learning methods be utilized to this end?
- What are the challenges in achieving the proposed goal in different applications (i.e. industrial human-robot collaboration, wearable robots, service robots, etc.)?

Wansoo Kim and Arash Ajoudani are with HRI² Lab, Istituto Italiano di Tecnologia, Genoa, Italy. E-mail: wan-soo.kim@iit.it and arash.ajoudani@iit.it.
Luka Peternel is with Department of Cognitive Robotics, Delft University of Technology, Delft, The Netherlands. E-mail: L.Peternel@tudelft.nl.
Eiichi Yoshida is with National Institute of Advanced Industrial Science and Technology (AIST), Japan. E-mail: e.yoshida@aist.go.jp.