

14 July 2018, PM

HCR Symposium

Guangda No. 1, 2/F, SEEC Hotel

Session 1 Advanced Human-Robot Interaction

Chairs: Hao DING, Miao LI

13:30-13:50 Multi Modal Human-Robot Cooperation: A Brief Historic Overview and Current Work
Alois C. KNOLL (Technische Universität München, Germany)

13:50-14:10 Multi Modal Human-Robot Cooperation: A Brief Historic Overview and Current Work
Etienne BURDET (Imperial College London, UK)

14:10-14:30 Health Engineering: From Robotic Arm Human Control To Cardiovascular Diseases
Prediction
Yuan-Ting ZHANG (City University of Hong Kong, China Hongkong)

14:30-14:50 Dance Partner Robot to Co-worker Robot "PaDY"
Kazuhiro KOSUGE (Tohoku University, Japan)

14:50-15:10 AI-Enhanced Robot Manipulation and Navigation
Il Hong SUH (Hanyang University, Korea)

15:10-15:30 Tea Break

Session 2 Intelligent Rehabilitation Robot I

Chairs: Qingdu LI, Song TANG

15:30-15:50 Towards Personalized Robotic Rehabilitation
Carlos BALAGUER (Universidad Carlos III de Madrid, Spain)

15:50-16:10 Remote control of heterogeneous devices based on force feedback
Hua ZHANG (China Southwest University of Science and Technology, China)

16:10-16:30 Research on Human Kinesiology and Wearable Robot
Caihua XIONG (Huazhong University of Science and Technology, China)

16:30-16:50 Exoskeleton Systems for Rehabilitation Medicine
Hong CHENG (University of Electronic Science and Technology of China, China)

16:50-17:10 Novel Rehabilitation Robotics for Overground Gait Training
Haoyong YU (National University of Singapore, Singapore)

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Session 1 Human Centered Systems

Chair: Jianwei ZHANG

- 08:30-08:35 Welcome Address by Chongfeng ZHANG
(Aerospace System Engineering Shanghai, ASES, China)
- 08:35-08:55 The Age of Human-Robot Collaboration: Deep Sea Exploration
Oussama KHATIB (Stanford University, USA)
- 08:55-09:15 Advances in Navigation, Grasping and Manipulation for Future Service Robots
Amir SHAPIRO (Ben-Gurion University of the Negev, Israel)
- 09:15-09:35 Health Care Service Robotic System
Toshio FUKUDA (Nagoya University, Japan)
- 09:35-09:55 Safe Human-robot Collaboration: Real-time Motion Planning, Hybrid Control, and
Reinforcement Learning
Torsten KROEGER (Karlsruher Institut für Technologie, Germany)
- 09:55-10:15 Space Mechanism and Applications
Meng CHEN (Aerospace System Engineering Shanghai, ASES, China)

10:15-10:30 Tea Break

Session 2 Human-in-the-Loop: Modelling and Perception

Chairs: Meng CHEN, Ming LI

- 10:30-10:50 Dynamics Simulation and Control of Space Manipulators
Huaiwu ZOU (Aerospace System Engineering Shanghai, ASES, China)
- 10:50-11:10 Sensor Fusion and Application: From Autopilot, Robot Astronauts to Rail Examination
Dezhen SONG (Texas A&M University, USA)
- 11:10-11:30 Modeling and Control of Unstable Physical Human-Machine Interactions: A Rider-Bikebot
Example
Jingang YI (Rutgers University, USA)
- 11:30-11:50 Enabling Robot for Elderly Health Monitoring
Shigang YUE (University of Lincoln, United Kingdom)
- 11:50-12:10 Cooking Robotics: AI Meets Physical World
Yu SUN (University of South Florida, USA)

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Session 1 Intelligent Rehabilitation Robot II

Chair: Robert RIENER, Chaoli WANG

- 13:30-13:50 Medicine 4.0: Common Challenges in Rehabilitation and Medical Robotics
Georg RAUTER (University of Basel, Switzerland)
- 13:50-14:10 The Development of Rehabilitation Robots
Zhen LIU (Nagasaki Institute of Applied Science, Japan)
- 14:10-14:30 Robotics for Medical Rehabilitation: Global Challenges and Opportunities
Shengquan XIE (University of Leeds, UK)
- 14:30-14:50 Neural Interface, Intelligent Prosthesis, and Rehabilitation Robot
Jiping HE (Beijing Institute of Technology, China)
- 14:50-15:10 Neuromodulation Theory and Design of Rehabilitation Training Robot
Jue WANG (Xi'an Jiao Tong University, China)
- 15:10-15:30 Design and Application for Service Robots
Ming LIU (Hong Kong University Science & Technology, China Hong Kong)

15:30-15:50 Tea Break

Session 2 AI in Medical Robot Systems

Chair: Qingjie ZHAO, Ruiqin LI

- 15:50-16:10 Assistive Robotic Handheld Instrument for Microsurgery
Wei Tech ANG (Nanyang Technology University, Singapore)
- 16:10-16:30 Collaborative Human-Centered Medical Robotics with Continuum and Compliance
Hongliang REN (National University of Singapore, Singapore)
- 16:30-16:50 Medical Robot Promotes Smart-Health Innovation
Lining SUN (Harbin Institute of Technology, China)
- 16:50-17:10 Lower-Limb Wearable Robots: Noninvasive Human-Robot Interfaces and Control Strategies
Qining WANG (Peking University, China)
- 17:10-17:30 The Trend of Fusion of the New Generation of AI and Robots
Jingtai LIU (Nankai University, China)
- 17:30-17:50 Technology of AI-Assisted Medical Diagnosis and its Applications
Wenqiang ZHANG (Fudan University, China)

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Session 1 Human-machine Fusion systems

Chair: Peter Meusel, Zhaopeng CHEN

08:30-08:50 Wearable Robotics: Powered Prosthetics to Powered Exoskeletons
Thomas SUGAR (Arizona State University, USA)

08:50-09:10 Assistive exoskeletons for motion assistance: development challenges and applications
Shaoping BAI (Aalborg University, Denmark)

09:10-09:30 Human-friendly assistive robots from the user's perspective
Jochen STEIL (Technische Universität Braunschweig, Germany)

09:30-09:50 Innovation of Health Robotic for Aging Society
Zhiwei LUO (Kobe University, Japan)

09:50-10:10 Development of Human Support Robotic Systems
Chi ZHU (Maebashi Institute of Technology, Japan)

10:10-10:30 Tea Break

Session 2 Future Intelligent Robots

Chair: Ying HU, Zhongcheng GUI

10:30-10:50 Advanced Control of Humanoid Robot
Rong XIONG (Zhejiang University, China)

10:50-11:10 Safe Human Robot Interaction of Forced Controlled Rehabilitation Robot
Feng GAO (Shanghai Jiao Tong University, China)

11:10-11:30 Neurorehabilitation and Neural Repair with Intelligent Robots
Yong YU (Kagoshima University, Japan)

11:30-11:50 Towards More Flexible Calibrations for Visual Sensing and Tracking
Youfu LI (City University of Hong Kong, China Hong Kong)

11:50-12:10 Robust Software Architecture for Human Centered Robot
Xiaorui ZHU (Harbin Institute of Technology, China)