



Call For Papers for the Workshop at IRCE2020

Artificial Intelligence for Improving Trustworthiness Of Robots and Autonomous Systems

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The 3rd International Conference on Intelligent Robotics and Control Engineering (IRCE 2020), which is hosted in Wadham College, University of Oxford, UK, co-sponsored by Singapore Institute of Electronic, Singapore, Lanzhou Jiaotong University, China, patrons with Concordia University, Canada, University of Electronic Science and Technology of China, Science and Engineering Institute, USA, etc. This event will provide unique opportunity to have fruitful discussions about Intelligent Robotics, Automations and Control Engineering, and best practices that address Artificial Intelligence. The IRCE conference aims to foster interdisciplinary and international collaboration opportunities, and strengthen domestic and international recognition in pure and applied research for the participants.

Internet of Things (IoT) delivers new value by connecting People, Process and Data. The new paradigm – ‘Internet of robotic things’ was coined in a report of ABI research to denote a concept where sensor data from a variety of sources are fused, processed using local and distributed intelligence and used to control and manipulate objects in the physical world. In the cyber-physical perspective of IoRT, sensor and data analytics technologies from the IoT are used to give robots a wider situational awareness that leads to better task execution. The value of IoRT has been demonstrated in distributed, heterogeneous robot control paradigms like networked robot systems or robot ecologies, or in approaches such as ubiquitous robotics and cloud robotics that place resource-intensive computation on the cloud. IoRT technology could inspire wider applications of robotic and autonomous systems (RAS). NIST’s trustworthiness framework of cyber physical systems covers cybersecurity, privacy, safety, reliability, and resilience. An effective RAS must be trustworthy. Especially, cybersecurity, safety, health and interaction of RAS directly affect the development of RAS towards fully autonomous systems without human intervention. To demonstrate the contribution of Artificial Intelligence techniques in the development of trustworthy RAS, with IEEE UK & Ireland RAS chapter, a workshop will be held at IRCE2020.

We now seek paper submissions for the workshop and that such papers should adhere to the standard IRCE2020 length, format and submission deadline. Click the EC Button to submit your paper. (<http://www.easychair.org/conferences/?conf=irce2020/>).



High quality of papers will be recommended to submit an extended version for *IEEE Transactions on Cognitive and Developmental Systems*. This workshop will cover the following topics related to the trustworthiness of RAS through AI techniques and Edge Computing, but not be limited.

- (1) RAS, dealing with anomalies in cyber space
Cognitive cybersecurity, privacy, security by design, privacy by design, as well as anomaly (Cyberattack, malware, intrusion, virus, and etc.) Detection, etc.
- (2) RAS, dealing with anomalies in surrounding environments
Safe navigation, obstacle detection, obstacle avoidance, pedestrian awareness, etc.
- (3) RAS, self-healing and maintenance of health
Fault detection and diagnosis, system life prediction, etc.
- (4) RAS, autonomy and trustiness in human-robot interaction
Socially intelligent robots, interpretive AI for Robotic Behaviour, mixed initiative in human-robot interaction.
- (5) Trusted and high quality/performance of robotic services for social-health care, advanced manufacturing, and extreme environments, etc.

Important Dates:

- Date of conference: 10-12 August, 2020
- Final Manuscript submission deadline: 20 June, 2020
- Notification of acceptance: 05 July, 2020
- Notification of acceptance: 5 working days
- Final Registration Deadline: 15 July, 2020