



IEEE Symposium Series on Computational Intelligence

December 6-9, 2019 Xiamen, China

## **CFP: IEEE Symposium on Domestic Robotics**

As the worldwide aging population is increasing, the health-care systems of every country face significant challenges to meet the surging needs of taking care of aging population. The elderly not only face numerous health issues physically, they also need to be accompanied to maintain a healthy mental state. This results in high demand of developing in-home assistive devices, such as assistive robots for domestic uses and other smart home devices, for assisting, interacting and monitoring elderly people in their daily life.

To these ends, the fundamental functions for these systems may include indoor scene detection, human activity recognition, basic manipulation skills, social interaction skills with the elderly and so on. Although many of the above-mentioned functions have been developed and tested in laboratory settings, there are still practical problems when implementing them in engineering systems and testing them with non-experienced end-users in real-life scenarios:

Firstly, the robustness and the adaptivity of the systems should be emphasized when used by the elderly users, whose learning capabilities, psychological and physical conditions may be different from ordinary users. Instead of requiring users to learn to understand the systems, the systems should provide friendly interfaces to communicate with users by using natural language, gestures, as well as other modalities.

Secondly, some of the solutions of these functions previously developed in the lab settings can be problematic for consumer robots. For example, expensive processes in computational, energy, storage and pricing might not be available/affordable for normal users.

Third, as the systems will be used in home environment, the interpretability of the algorithms, especially the learning algorithms, embedded in the systems should be guaranteed in order to ensure the system to be safe and reliable.

The target of this symposium is to tackle the challenges of developing domestic robots. We provide an opportunity for researchers and practitioners interested in the intersection of service robots, smart home and machine learning to come together, share interesting ideas and discuss ways to jointly move the field forward.

We welcome paper contributions from researchers and engineers specializing in different topics of robotic systems, or the feedbacks from the end-users who can share their development to bridge the gap between the experimental systems and the end-products. We also welcome researchers and industrial partners to show their demonstrations of robots or smart home applications about their learning, design and interaction capabilities in order to facilitate the process from prototypes to products.

### **Topics**

In general, we welcome paper contributions in studies in different topics on service robot, companion robots and smart home applications. The main topics of interests include but not limited to:

- Medical and Healthcare Robotics
- Cleaning, Floor Care Robotics
- Entertainment Robotics
- Social Robotics
- Human-Robot Interaction and Interactive Robotics
- Human-Centered Machine Learning
- Machine Learning and Applications on Robotics
- Conversational Systems on Robotics
- Multi-modal Interaction for Robotics
- Home IoT Devices
- Smart Home and Smart City Applications

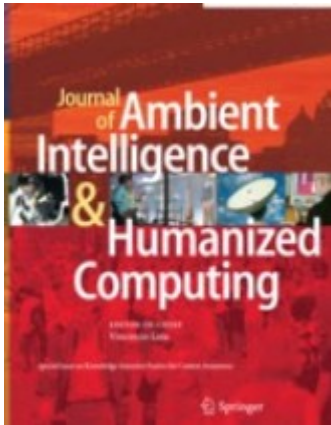
### Important Dates:

Paper Submissions: July 10, 2019

Notification to Authors: September 1, 2019

Final Submission: October 1, 2019

Early Registration: October 1, 2019



A selection of accepted papers will be published in an Special Issue of the journal Ambient Intelligence & Humanized Computing dedicated to **Human Behaviour Monitoring, Interpretation and Understanding (NOTION)** (<https://jonizhong.weebly.com/news.html>). The corresponding authors will be expected to receive an invitation at **the end of August** after your conference manuscript is accepted.

### Symposium Chairs

Junpei Zhong, Nottingham Trent University, UK

Ting Han, AIST, Japan

Xiaofeng Liu, Hohai University, China

Amhad Lotfi, Nottingham Trent University, UK

Angelo Cangelosi, University of Manchester, UK / AIST, Japan

**Contact email:** [zhong@junpei.eu](mailto:zhong@junpei.eu)