

SPECIAL ISSUE ON ADVANCED UBIQUITOUS COMPUTING SYSTEMS FOR SOCIETY 5.0

PREFACE



Towards Society 5.0, in which the cyber world in computer networks is highly integrated with the real world, worldwide research and development on cyber-physical systems (CPSs) are actively ongoing for the smartification of our lives and economic activities. Advances in AI and IoT technologies are facilitating the rapid penetration of CPSs into our society and are expected to bring about improvements in all industrial sectors. In particular, the construction of an advanced ubiquitous computing environment combined with various academic and engineering achievements is now recognized as indispensable for realizing Society 5.0. This special issue aims to publish a wide range of state-of-the-art research achievements in the field of ubiquitous computing so that we can discover the emerging challenges that must be overcome to realize Society 5.0.

In this special issue, we have many interesting and novel research papers related to the above-mentioned topics. The first paper presents an exercise tracking method that can automatically record the types and amounts of exercises performed using a short stick equipped with an inertial measurement sensor (IMU) sensor. The next three papers deal with stress sensing of physicians, caregivers, and students in their daily life. The fifth paper reports reliability estimation and filtering of heart rate measurement using an inertial sensor during exercise and the sixth paper presents a novel gesture recognition method that can reduce erroneous recognition. The seventh paper presents a quantitative evaluation system for online meetings based on multimodal micro-behavior analysis. Also, the eighth and ninth papers deal with a Bluetooth low energy (BLE) beacon-based indoor localization technique. The final paper shows developments of the participatory mobile urban sensing platform for a smart city. Overall, I think that all the research papers here are important for realizing an advanced ubiquitous computing environment for Society 5.0.

Finally, I hope that research in the field of ubiquitous computing toward realizing Society 5.0 will inspire future developments. At the same time, I believe that the use of these technologies will become increasingly widespread in our lives and help lead to a prosperous future society. I would like to thank all the reviewers for their cooperation in the publication of this special issue.

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