Keynote I

Topic:

Exploiting IoT and Virtual Agent for Monitoring Living and Mind of Elderly People at Home

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Abstract:

In this "super" aging society, the shortage of nursing care personnel and facilities is becoming more serious. The government is urging a shift to home care instead of building more nursing care facilities. In Japan, the comprehensive community-based care system promoted by the Ministry of Health, Labour and Welfare is put in place based on the four aids: "self-help," "mutual aid," "mutual assistance," and "public assistance". However, given the declining birthrate, aging population, and fiscal constraints, it is difficult to expand "mutual aid" and "public assistance". Thus, efforts to promote "self-help" and "mutual aid" will become more important.

Our research group is studying methods that support elderly people at home using engineering technology. Our research question is “how can the system help the elderly and people with dementia lead healthy lives at home, based on self-help and mutual assistance?” We are conducting research and development of support systems that can be introduced to ordinary households, making full use of smart home, IoT, service and

cloud computing, which is our field of expertise.

What is important is "individuality" of the elderly people at home, i.e., the living circumstances and contexts are completely different from one household to another. The challenge is how to understand the individual situation, and to realize support that is tailored to each elderly person. In this presentation, we introduce two sensing technologies, which utilize IoT and agents to monitor in-home contexts and internal conditions of elderly people.

About the Speaker:

Masahide Nakamura received the B.E., M.E., and Ph.D. degrees in Information and Computer Sciences from Osaka University, Japan, in 1994, 1996, 1999, respectively. From 1999 to 2000, he has been a post-doctoral fellow in SITE at University of Ottawa, Canada. He joined Cybermedia Center at Osaka University from 2000 to 2002. From 2002 to 2007, he worked for the Graduate School of Information Science at Nara Institute of Science and Technology, Japan. From 2007 to 2022, he worked for the Graduate School of System Informatics at Kobe University. He is currently a full professor in the Center of Mathematical and Data Science Center at Kobe University. He is a member of the IEEE, ACM, IEICE and IPSJ.

Research Interests:

service computing, cloud computing, smart home, smart city, gerontechnology, data-driven approach, software engineering

Major Honors and Awards:

- SNPD2022-Summer Best Paper Award (June, 2022)
- Kobe University President's Award (October, 2021)
- IEICE Human Communication Award (December, 2019)
- ICSPIS2018 Best Paper Award (November, 2018)
- BCD2018 Best Paper Award (July 2018)
- and more…