Associate Professor

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Background

2018-present	Associate professor, Institute of Science and Engineering, Academic Assembly, Shimane University
2014	Associate Professor, Interdisciplinary Graduate School of Science and Engineering, Shimane University
2007	Ph.D., Information Science and Technology, Osaka University, Japan
2004	M.E., Information Science and Technology, Osaka University, Japan
2002	B.E., Information Science and Technology, Osaka University, Japan

Research

Mobile Wireless Sensor Networks (MWSNs): A kind of wireless networks which consists of mobile sensor nodes with local direct communication functions (e.g. smartphones, vehicles, drones, etc.). In a MWSN, sensor data must be gathered in a distributed way since each mobile sensor node cannot recognize information on the entire network (e.g. node density, network topology, data distribution). In addition, it is desirable to reduce the network traffic for gathering sensor data in order to avoid exhausting the limited wireless channel bandwidth and energy of nodes. I am now working to design efficient sensor data gathering methods and communication control protocols which can reduce the communication traffic while satisfying requirements of applications that utilizes sensor data generated in MWSNs.

Implementation of Wireless Sensor Networks (WSNs): WSNs (including MWSNs described above) have become a widely-used system in recent years. Currently, various kinds of WSNs are being developed all over the world. I am now working to design and implement some WSN systems, especially assuming some local requirements in Shimane Prefecture. For example, as a collaborating project with other two universities, we are designing and implementing a WSN system that supports mandarin farmers in Oki Islands. In addition, we are implementing another WSN system that supports an iron foundry in Matsue City.

Key papers

1. K.Matsuo, K.Goto, A.Kanzaki, T.Hara: Efficient Periodical Boundary Detection Through Boundary Crossing Record and Sensor Data Overhearing in Dense MWSNs, Pervasive and Mobile Computing, Vol.49, pp.45-61 (2018).

2. A. Kanzaki, K.Kuwabara: A P2P-based Data Storing Method for Participatory Sensing, Proc. Int'l Conf. on Complex, Intelligent, and Software Intensive Systems (CISIS 2018), pp.486-496 (2018).
   * Acceptance rate: 28%, Best Paper Award

3. K. Matsuo, K.Goto, A.Kanzaki, T.Hara: A Sampling-based Boundary Detection Method with Consideration of Boundary Shape in Dense Mobile Wireless Sensor Networks, Proc. Int'l Conf. on Advances in Mobile Computing & Multimedia (MoMM 2016), pp.307-316 (2016).   * Acceptance rate: 30.2%, Best Paper Award

4. A.Kanzaki, T.Hara, Y.Ishi, T.Yoshihisa, Y.Teranishi, S.Shimojo: X-Sensor: Wireless Sensor Network Testbed Integrating Multiple Networks, Book Chapter (Chapter III-3) in Wireless Sensor Network Technologies for the Information Explosion Era (Series: Studies in Computational Intelligence), Vol.278, pp.149-271, Springer-Verlag (2010).