

## Embedded Systems Laboratory



Junji Kitamichi  
Professor

The Embedded Systems Laboratory was established in July, 2013. Embedded systems are products which computers are embedded, and the research region of the embedded systems is very wide, such as software, hardware, and middle-ware, from theory to application, calculation performance, power consumption, safety, and development methods. We are researching the following themes out of many research topics about embedded systems.

1. Safety Embedded System
  - (a) Formal Approach for Circuits Design and Systems Design
  - (b) Design Method at System Design Level
2. Dynamically Reconfigurable Architectures and Systems
3. Heuristic Approaches for Combinatorial Optimization Problems
4. Education of Circuits Design, Embedded Systems and Computer Architecture

### Members of the Embedded Systems Laboratory

#### **Prof. Junji Kitamichi:**

He received the B.S. and Ph.D degrees in information and computer sciences from Osaka University, Japan, in 1988 and 1999, respectively. In 1991, he joined the Department of Information and Computer Sciences at Osaka University, Japan, as a research associate. From 1999 to 2002, he was with Cybermedia Center at Osaka University, where he was assistant professor. In 2002, he joined School of Computer Science and Engineering, the University of Aizu, Japan. He was a professor at the University of Aizu from 2013. His research interests include formal methods for VLSI design, dynamically reconfigurable systems, formal design and

verification of safety systems, heuristics and parallel algorithms for combinatorial optimization problems.

**Students :**

B3:Hiroki Saito, Kanji Kobayashi, Ryohei Yamauchi, Hiroyuki Niida

B4:Souichirou Endou, Kazumi Hoshi.

## Summary of Achievement

### Unrefereed Papers

- [kitamiti-01:2014] IPA(Information technology Promotion Agency) SEC(Software Reliability Enhancement Center) Software Reliability Enhancement Promotion Committee System Fault Diagnosis WG. System Fault Diagnosis Methods for Large and Complicated Embedded Systems / Proposal of Post hoc V&V by Model Base Approach. In IPA, editor, *IPA Report*. IPA, IPA, March 2015.
- [kitamiti-02:2014] Yosuke WAKISAKA, Naoki SHIBATA, Junji KITAMICHI, and Minoru ITO. Task Scheduling for Multi-core Processors Systems Considering Turbo Boost and Hyper Threading. In IPSJ, editor, *IPSJ SIG Technical Report*, volume 2014-DSP-159, pages pp.1–9. IPSJ, IPSJ, Oct. 2014.
- [kitamiti-03:2014] Junji KITAMICHI. System Fault Diagnosis Methods ~Application of formal method ~. In IPA, editor, *IPA booth presentation*. IPA, IPA, Nov. 2014.

### Academic Activities

- [kitamiti-04:2014] Kitamichi J., 2014.  
Member. IEEE
- [kitamiti-05:2014] Kitamichi J., 2014.  
Member and Editorial Committee Member, IEICE. Steering Committee Member, Tohoku Branch, IEICE
- [kitamiti-06:2014] Kitamichi J., 2014-2015.  
Editor of Editorial Committee of the IEICE Transactions on Special Section on-Formal Approach
- [kitamiti-07:2014] Kitamichi J., 2014.  
System Fault Diagnosis WG Member, Software Reliability Enhancement Center (SEC) , IPA

## Summary of Achievement

[kitamiti-08:2014] Kitamichi J., 2014.

Member, IPSJ

[kitamiti-09:2014] Kitamichi J., 2014-2015.

Councilor, IEICE