External Awards

GFP2012 Best Innovation Design Paper Award (3rd place)
Winners: Rai Takahashi (Rai Kou), Hiroshi Fukuda, Tai Tsuchizawa, Hidetaka Nishi, Tatsuro Hiraki, and Koji Yamada, NTT Microsystem Integration Laboratories
Date: August 31, 2012
Organization: IEEE 9th International Conference on Group IV Photonics (GFP2012)

For "Silicon/silica-hybrid delay line interferometer for DPSK demodulation".

A 1-bit delay line interferometer based on silicon/silica-hybrid waveguides is demonstrated for a differential phase-shift keying (DPSK) demodulator. A 10-Gb/s non-return-to-zero DPSK signal is demodulated with error-free operation in telecommunications bands.
Published as: R. Kou, H. Fukuda, T. Tsuchizawa, H. Nishi, T. Hiraki, and K. Yamada, "Silicon/silica-hybrid delay line interferometer for DPSK demodulation," Proc. of 2012 IEEE 9th International Conference on Group IV Photonics (GFP), pp. 174–176, San Diego, CA, USA.

Best Paper Award
Winners: Takuya Otsuka, Takashi Aoki, Eiichi Hosoya, and Akira Onozawa, NTT Microsystem Integration Laboratories
Date: September 20, 2012
Organization: IEEE Computer Society, MCSoC201

For "An Image Recognition System for Multiple Video Inputs over a Multi-FPGA System".

A multi-user shared FPGA-based cloud computing platform is presented for an image recognition application with multiple video inputs (FPGA: field programmable gate array). The platform is made of a sea of FPGA devices connected as a hierarchical ring network. The users place IP (Internet protocol) cores called tiles on the platform and connect them together to form a sequence. An architecture featuring a parallel pipeline of tiles and an intra-tile selector network was chosen to let users work their own tile sequences in parallel without causing any interference with other users.

A set of application programming interfaces (APIs) for writing tiles, deleting tiles, and configuring the intra-tile selector network is implemented. With the APIs, the system manipulates the tiles on FPGAs in response to users' demands. The platform is suitable for running applications requiring low-latency and high-throughput data-processing capability. A HOG (histograms of oriented gradients) feature extractor and a Real AdaBoost classifier are implemented to perform image recognition.
Published as: T. Otsuka, T. Aoki, E. Hosoya, and A. Onozawa, "An Image Recognition System for Multiple Video Inputs over a Multi-FPGA System," Proc. of 2012 IEEE 6th International Symposium on Embedded Multicore SoCs (MCSoC 2012), Aizu-Wakamatsu, Fukushima, Japan.

Outstanding Paper Award
Winners: Dinesh Babu Jayagopi[1], Dairazalia Sanchez-Cortes[1], Kazuhiro Otsuka[2], Junji Yamato[2], and Daniel Gatica-Perez[1]
   †1　Idiap Research Institute
   †2　NTT Communication Science Laboratories
Date: October 25, 2012
Organization: ACM ICMI2012 (14th ACM International Conference on Multimodal Interaction)

For "Linking Speaking and Looking Behavior Patterns with Group Composition, Perception, and Performance".

This paper addresses the task of mining typical behavioral patterns from small-group face-to-face interactions and linking them to social-psychological group variables. Towards this goal, we define group speaking and looking cues by aggregating automatically extracted cues at the individual and dyadic levels. Then, we define a bag of nonverbal patterns (bag-of-NVPs) to discretize the group cues. The topics learnt using the Latent Dirichlet Allocation (LDA) topic model are then interpreted by studying the correlations with group variables such as group composition, group interpersonal perception, and group performance. Our results show that both group behavior cues and topics have significant correlations with (and predictive information for) all the above variables. For our study, we use interactions with unacquainted members i.e., newly formed groups.
Published as: D. B. Jayagopi, D. Sanchez-Cortes, K. Otsuka, J. Yamato, and D. Gatica-Perez, "Linking Speaking and Looking Behavior Patterns with Group Composition, Perception, and Performance," Proc. of the International Conference on Multimodal Interaction (ICMI), Santa Monica, USA, 2012.