

The 4th International Symposium on Brainware LSI

February 24-25, 2017

Conference Room, Main Building (M601), RIEC, Tohoku University, Sendai, Japan

Sponsored by 2015 RIEC Collaboration Project Research (PJ#:H26/B09) "Brainware LSI International Joint Research"
and Brainware LSI Project, RIEC, Tohoku University

Tentative Program

----- February 24 (Friday) -----

12:30- Registration

13:00-13:10 Opening remarks

<Session 1: Brainware LSI Technologies I >

13:10-13:40 *Challenge of a Nonvolatile FPGA for a Brainware LSI Platform*

Daisuke Suzuki (Tohoku University, Japan)

13:40-14:10 *Brain-Inspired Computing for Error-Resilient VLSI System*

Masanori Natsui (Tohoku University, Japan)

14:10-14:40 *Threats and countermeasures for information security on a silicon chip*

Byong-Deok Choi (Hanyang University, Korea)

14:40-15:00 Coffee break

<Session 2: Brainware LSI Technologies II >

15:00-15:30 *Embedded Processing for High Power Electronic Modules*

Wai Tung Ng (University of Toronto, Canada)

15:30-16:00 *Flexible spike delay controller for neural processing based on FPGA*

Jordi Madrenas (Technical University of Catalunya, Spain)

16:00-16:30 *Introduction to Approximate Computing*

Jie Han (University of Alberta, Canada)

16:30-16:50 Coffee break

<Session 3: Recognition & Learning in Brainware LSI I >

16:50-17:20 *Vision processor based on motion-stereo vision implementing huge neural connections by successive Hough transform -*

Hisanao Akima (Tohoku University, Japan)

17:20-17:50 *Prediction of gaze shifts on movies from integration of eye-head coordination and saliency map*

Yasuhiro Hatori (National Institute of Advanced Industrial Science and Technology, Japan)

17:50-18:20 *Visual attention and object recognition algorithms for rapid visual scene analysis*

Laurent Itti (USC Computer Science, Psychology and Neuroscience, USA)

18:30-21:00 Open discussion

----- February 25 (Saturday) -----

<Session 4: Recognition & Learning in Brainware LSI II >

- 09:00- 09:30 *Stochastic Computation for Deep Neural Networks*
Naoya Onizawa (Tohoku University, Japan)
- 09:30- 10:00 *Auditory spatial attention improves word intelligibility in multi-talker environment*
Ryo Teraoka (Tohoku University/Muroran Institute of Technology, Japan)
- 10:00-10:30 *Brain connectivity analysis of human auditory fMRI data*
Stefan Uppenkamp (University of Oldenburg, Germany)
- 10:30-10:50 Coffee break

<Session 2: Brainware LSI Technologies III >

- 10:50-11:20 *Towards a brainmorphic whole organism computing system*
Yoshihiko Horio (Tohoku University, Japan)
- 11:20-11:50 *Gait Transition to Gallop via an Interlimb Coordination Rule Based on Tegotae from Body Support and Propulsion*
Akira Fukuhara (Tohoku University, Japan)
- 11:50-12:20 *Mystery of the Computing Amoeba*
Ryo Kobayashi (Hiroshima University, Japan)
- 12:20-12:30 Closing remarks