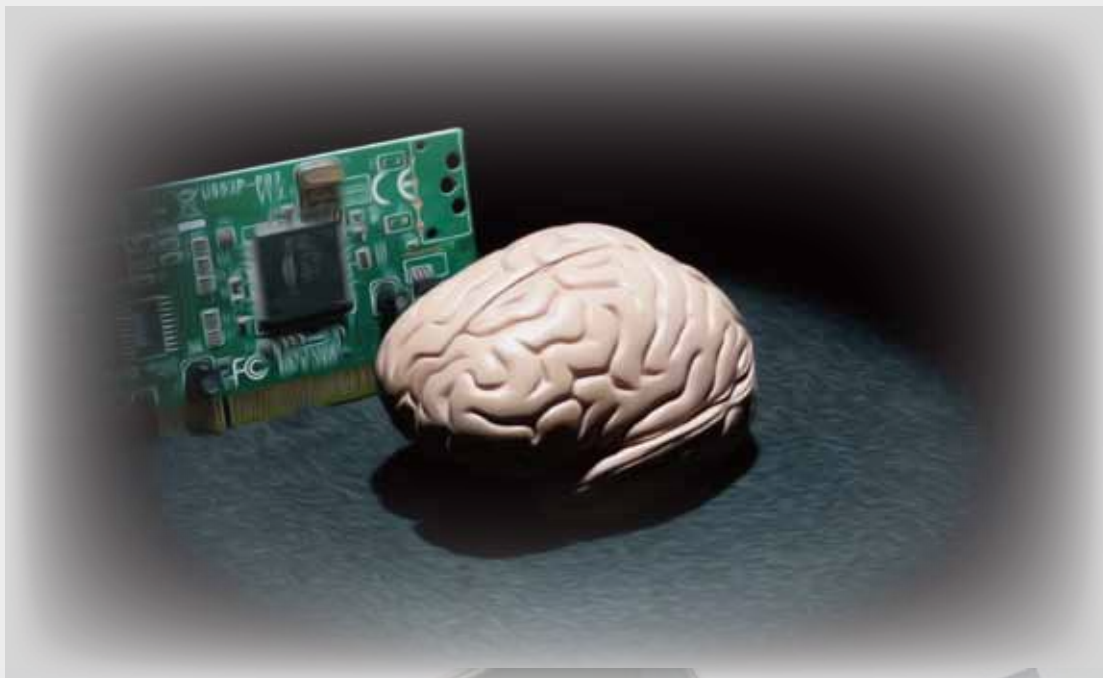# The 2nd International Symposium on

Brainware LSI

March 2-3, 2015

www.ngc.riec.tohoku.ac.jp/BLPSymp2015

Program & Abstracts

Research Institute of Electrical Communication
Tohoku University

The 2nd International Symposium on Brainware LSI

March 2-3, 2015

Conference Room, Main Building, RIEC, Tohoku University, Sendai, Japan

Tentative Program

-------------------- March 2 (Monday) --------------------

09:30-	Registration
10:00-10:10	Opening remarks

<Session 1: Recognition & Learning in Brainware LSI I>

10:10-10:40 *Computational Models of Human Visual Attention Driven by Auditory Cues*
   Akisato Kimura (Communication Science Laboratories, NTT Corporation, Japan)
10:40-11:10 *Eye-Head Coordination During Viewing with Cognitive Tasks*
   York Fang (Tohoku University, Japan)
11:10-11:40 *Algorithms and Architectures for Decoding Polar Codes*
   Warren J. Gross (McGill University, Canada)
11:40-13:30 Lunch meeting

<Session 2: Brainware LSI Technologies I >

13:30-14:00 *VLSI Design of Neural Network Model for Local Motion Detection in Motion Stereo Vision*
   Hisanao Akima (Tohoku University, Japan)
14:00-14:30 *Scalable Communication Model for Configurable Hardware Architectures of Large-Scale Spiking Neural Networks*
   Mireya Zapata (Technical University of Catalunya, Spain)
14:30-15:00 *Nonvolatile FPGA Platform for Brainware-LSI Emulation*
   Daisuke Suzuki (Tohoku University, Japan)
15:00-15:20 Coffee break

<Session 3: Brainware LSI Technologies II>

15:20-15:50 *An Integrated Reconfigurable Tri-mode DC-DC Converter for Brainware VLSI Power Management*
   Wai Tung Ng (University of Toronto, Canada)
15:50-16:20 *Stochastic Computation for Brainware Massively Parallel Vision Chips*
   Naoya Onizawa (Tohoku University, Japan)
16:20-16:50 *Toward Understanding the Interlimb Coordination Mechanism Underlying Legged Locomotion*
   Akio Ishiguro (Tohoku University, Japan)

-------------------- March 3 (Tuesday) --------------------

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

09:30- 10:00 *The Effect of Utterance Movie of Irrelevant Speech on Serial Recall*
   Tomoko Ohtani (Tohoku University, Japan)
10:00-10:30 *Reproducing Individual HRTFs with A Low Channel Count Microphone Array - Current State and Future Research*
   Matthias Blau (Jade University of Applied Sciences, Germany)
10:30-10:50 Coffee break

<Session 5: Brainware LSI Technologies III >

10:50-11:20 *Variability-Tolerant Convolutional Neural Network for Pattern Recognition Applications based on OxRAM Synapses*
   Daniele Garbin (CEA-LETI-MINATEC, France)
11:20-11:50 *Removal of Local Minima from Back Propagation Learning in IDL Model*
   Yuta Horiuchi (Tohoku University, Japan)
11:50-12:20 *Efficient Neural Computing using Cellular Array of Magneto-Metallic Neurons*
   Kaushik Roy (Purdue University, USA)
12:20-12:30 Closing remarks