NeurONN: Neuromorphic Computing with Oscillatory Neural Networks

Aida Todri-Sanial

Phase-Change Switch Workshop on Neuromorphic Computing

December 17, 2020

Event address:
https://ibm.webex.com/ibm/onstage/g.php?MTID=e85e55534f154ad9f04867ad6f56328da

09:00 – 09:05 *Welcome Note from Organizers*
Siegfried Karg, IBM Research Zurich, Switzerland

09:05 – 09:30 *Phase-Change Switch Project overview*
Adrian Ionescu, EPF Lausanne, Switzerland

EU projects related to Neuromorphic computing

09:30 – 09:55 *NeurONN: Neuromorphic Computing with Oscillatory Neural Networks*
Aida Todri-Sanial, CNRS, LIRMM, France

09:55 – 10:20 *MANIC: Developing materials for neuromorphic devices and circuits*
Beatriz Noheda, RU Groningen, The Netherlands

10:20 – 10:45 *MeMscales, Memory with multi-scale time constants for neuromorphic architectures*
Elisa Vianello, CEA Leti, France

10:45 – 11:00 *Coffee Break*

Materials and Devices

11:00 – 11:30 *Neuromorphic computing via device physics in resistive switching memories*
Daniele Ielmini, Politecnico di Milano, Italy

11:30 – 12:00 *Radio Frequency tunable functions with VO_2 and Ge-doped VO_2*
Andrei Müller, EPF Lausanne, Switzerland

12:00 – 12:30 *Ion liquid gate induced changes in properties of oxide thin films*
Stuart Parkin, MPI Halle, Germany

12:30 – 13:30 *Lunch Break*

Neuromorphic Circuits & Architectures

13:30 – 14:00 *Exploiting temporal dynamics for sensing*
Elisabetta Chicca, RU Groningen, The Netherlands

14:00 – 14:30 *Computing with delays: Getting inspiration from plasticity in neuroglial circuits*
Renaud Jolivet, Univ Geneva, Switzerland

14:30 – 15:00 *VO_2 coupled oscillators as hardware accelerators for convolutional neural networks*
Elisabetta Corti, IBM Research Zurich, Switzerland

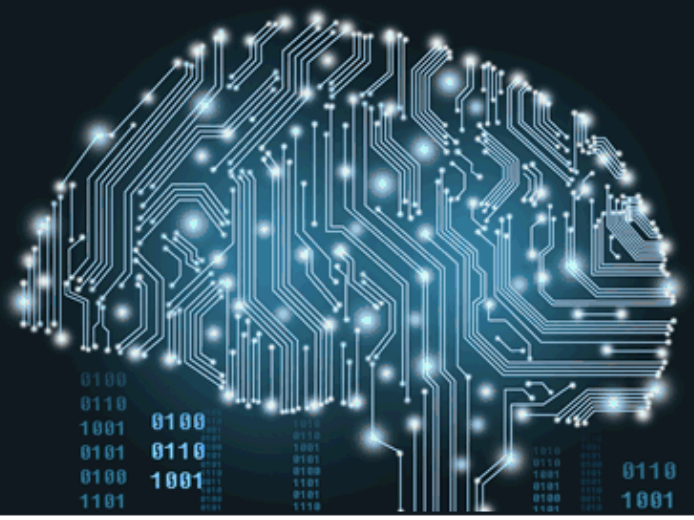
15:00 – 15:15 *Coffee Break*

Neuromorphic Computing

15:15 – 15:45 *Algorithm-Circuits-Device Co-Design for Neuromorphic Intelligence*
Melika Payvand, Univ Zurich, Switzerland

15:45 – 16:15 *Memristive Neuromorphic Systems*
Bernabé Linares-Barranco, CSIC-IMSE, Spain

16:15 – 16:45 *Phase-change memory enables energy-efficient brain-inspired computing*
Manuel Le Gallo, IBM Research Zurich, Switzerland



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PHASE-CHANGE SWITCH
https://phasechange-switch.org/

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