

AI Hardware: Test, Reliability and Security (AI-TREATS)

May 26th and 27th, 2022 (hybrid event)

Program (all times are CET)

Thursday, May 26th: 16:00 – 18:45

16:00	Opening <i>Haralampos Stratigopoulos (Sorbonne Université, CNRS, LIP6, France) – General Co-Chair</i> <i>Ioana Vatajelu, (Université Grenoble Alpes, CNRS, TIMA, France) – General Co-Chair</i> <i>Fei Su (Intel, USA) – Program Co-Chair</i> <i>Martin Andraud (Aalto University, Finland) – Program Co-Chair</i>
16:10	Session 1: Keynote Harnessing Neural Network Characteristics for Shaping Safe and Reliable AI Hardware <i>Alex Orailoglu (University of California San Diego, USA)</i>
17:00	Session 2 17:00 Testing of AI Chips <i>Yu Huang (HiSilicon Technologies Co. Ltd, China)</i> 17:30 Resilient Deep Learning Accelerators <i>Yanjing Li (University of Chicago, USA)</i> 18:00 Multiple Bit Error Rate Training <i>Abdullah Murat Buldu (Bogazici University, Turkey), Alper Sen (Bogazici University, Turkey), Karthik Swaminathan (IBM ,USA) and Brian Kahne (Qualcomm, USA)</i>
18:45	Cocktail Reception

Friday, May 27th: 8:30 – 15:45

08:30	Session 3 08:30 Defect Analysis of a Spintronic Synapse for Spiking Neural Networks <i>Salah Daddinounou (TIMA - INPG, France) and Elena-Ioana Vatajelu (TIMA - INPG- CNRS, France)</i> 08:55 Relationship Between Robustness and Resilience of Deep Neural Networks <i>Abdullah Murat Buldu (Bogazici University, Turkey), Mehmet Melih Arıcı (Bogazici University, Turkey), Alper Sen (Bogazici University, Turkey), Karthik Swaminathan (IBM ,USA) and Brian Kahne (Qualcomm, USA)</i> 09:20 Estimating the Criticality of Synaptic Weights <i>Annachiara Ruospo (Politecnico di Torino, Italy), Gabriele Gavarini (Politecnico di Torino, Italy), Marcello Traiola (Inria Rennes/IRISA, France), Alberto Bosio (Lyon Institute of Nanotechnology, France) and Ernesto Sanchez (Politecnico di Torino, Italy)</i>
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	<p>09:45 Reliability and Fault Tolerance in Spiking Neural Network Accelerators <i>Theofilos Spyrou (Sorbonne Université, CNRS, LIP6, France), Sarah A. El-Sayed (Sorbonne Université, CNRS, LIP6, France), Engin Afacan (Gebze Technical University, Turkey), Luis A. Camuñas-Mesa (Instituto de Microelectrónica de Sevilla, CSIC, University of Sevilla, Spain), Bernabé Linares-Barranco (Instituto de Microelectrónica de Sevilla, CSIC, University of Sevilla, Spain), Haralampos-G. Stratigopoulos (Sorbonne Université, CNRS, LIP6, France)</i></p> <p>10:10 Reliability of computation in memristive memories for AI applications <i>Atousa Jafari (Karlsruhe Institute of Technology, Germany), Leon Brackmann (RWTH Aachen University, Germany), Mahta Mayahinia (Karlsruhe Institute of Technology, Germany), Drik Wouters (RWTH Aachen University, Germany), Mehdi Tahoori (Karlsruhe Institute of Technology, Germany)</i></p>
10:35	Break
11:00	<p>Session 4</p> <p>11:00 Understanding Error Propagation in Semantic Segmentation Applications <i>Stéphane Burel (CEA, France), Adrian Evans (CEA, France) and Lorena Anghel (Grenoble INP, SPINTEC Laboratory, France)</i></p> <p>11:30 Incorporating Feedback for Robust Deep Learning Inference <i>Qiang Xu (Chinese University of Hong Kong, Hong Kong)</i></p> <p>12:00 Can we Rely on Self-Driving Cars? Evaluation and Mitigation of Neutron-Induced Errors in Convolutional Neural Networks for Autonomous Vehicle <i>Paolo Rech (Universidade Federal do Rio Grande do Sul, Brazil/University of Trento, Italy)</i></p>
12:30	Lunch
14:00	<p>Session 5</p> <p>14:00 The Impact of Machine Learning on Hardware Security Research <i>Sohrab Aftabjehani (Intel, USA)</i></p>
14:30	<p>Session 6: Panel</p> <p>Achieving testability, dependability and security: AI as a friend or foe? <i>Moderator: Mehdi Tahoori (KIT, Germany)</i></p> <p>Panelists:</p> <ul style="list-style-type: none"> - <i>Ihsen Alouani (Université Polytechnique Hauts-De-France, CNRS, IEMN, France)</i> - <i>Lilas Alrahis (New York University at Abu Dhabi, UAE)</i> - <i>Abhijit Chatterjee, Abhijit (Georgia Institute of Technology, USA)</i> - <i>Alberto Bosio (École Centrale de Lyon, INL, France)</i> - <i>Said Hamdoui (TU Delft, The Netherlands)</i>
15:30	<p>Closing remarks</p> <p><i>Haralampos Stratigopoulos (Sorbonne Université, CNRS, LIP6, France) – General Co-Chair</i> <i>Ioana Vatajelu, (Université Grenoble Alpes, CNRS, TIMA, France) – General Co-Chair</i> <i>Fei Su (Intel, USA) – Program Co-Chair</i> <i>Martin Andraud (Aalto University, Finland) – Program Co-Chair</i></p>