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Energy Consumption and Electronic Devices: Why we need to re-think chip design for AI?

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Venue Parcours Recherche Ingénieur (PRI)
9 September 2021

Title: Energy Consumption and Electronics Devices: Why we need to re-think chip design for AI?

Abstract:
What are the promises and perils of future digital technology for the planet? The information communication technology (ICT) industry is revolutionizing the way we work, learn, entertain and live. Although our electronic devices do not spew out black smoke, they are not bereft of environmental impact.

In this talk, I will share some of our brain-inspired innovations for "green" electronics. Energy-efficient systems that mimic biological neuronal networks can revolutionize electronics by enabling low power execution of AI workloads on all connected cyber-physical systems such as autonomous car driving, intelligent agents, smart transport, smart healthcare, and smart everything. I will cover aspects from materials, devices, system architecture to demonstrators. This work is conducted in the framework of the EU H2020 NEURONN project, www.neuronn.eu.

Bio: Dr. Aida Todri-Sanial is a CNRS Research Director at LIRMM lab and a Senior Member of IEEE. Dr. Todri-Sanial was a visiting fellow at the Cambridge Graphene Center and Wolfson College at the University of Cambridge, UK, during 2016-2017. Previously, she was an R&D Engineer for Fermi National Accelerator Laboratory, IL. She has also held visiting research positions at Mentor Graphics, Cadence Design Systems, STMicroelectronics, and IBM TJ Watson Research Center. Her research interests focus on emerging technologies and novel computing paradigms such as neuromorphic and quantum computing. She has co-authored more than 100 publications on high-impact journals and conferences. Dr. Todri-Sanial was a recipient of John Bardeen Fellow in Engineering in 2009, CNRS Prime d'Excellence Scientifique in 2012, ACM Distinguished Speakers 2016-2018, CNRS Bronze Medal in 2016, and ACM SIGDA Meritorious Service Award in 2020. Dr. Todri-Sanial is the EU H2020 NeurONN project coordinator and a participant in the EU H2020 SmartVista and EU H2020 CONNECT projects. Website: https://www.lirmm.fr/aida-todri-sanial