Conference Report

ISLPED 2023: International Symposium on Low-Power Electronics and Design

Axel Jantsch
Institute of Computer Technology
TU Wien
1040 Vienna, Austria

Swaroop Ghosh
School of Electrical Engineering and Computer Science
The Pennsylvania State University
University Park, PA 16802 USA

Umit Ogras
Electrical and Computer Engineering Department
University of Wisconsin–Madison
Madison, WI 53706 USA

Pascal Meinerzhagen
Intel
3074 Muri bei Bern, Switzerland

The ISLPED 2023 conference was held as a presence-only event from 6 to 8 August 2023, at the premises of the Technische Universität TU Wien near the center of Vienna, Austria. It was the first presence-only meeting after the disruption due to the COVID-19 pandemic, which was very much enjoyed by all delegates. 35 full papers and 18 posters were presented in two parallel sessions. Also, two keynote presentations, one special session, and one panel were organized. In addition, a design contest with seven participants was conducted. Again, artificial neural network-based machine-learning topics have been prominently represented in both the technical and special sessions.

Conference report

After three years of virtual and hybrid meetings, ISLPED 2023 was again a presence-only event, which was enjoyed and appreciated by all delegates, who again could engage in animated and live discussions. After the full paper deadline on 20 March, 145 full paper submissions were received, representing a 51% increase over 2022, but was slightly below the prepandemic level of 150–166 submissions. Based on 580 reviews (~4 reviews per paper), 35 full presentations and 18 posters were accepted to be presented at the symposium.

The symposium took place at the premises of the Technische Universität TU Wien, close to the center of Vienna, Austria. Since students were on vacation, the lecture rooms and the corridors provided a spacious environment facilitating interaction.

ISLPED 2023 featured two inspiring keynotes by Jan Rabaey on "Lessons from the Brain" and by Radu Marculescu on "From Watts to Wisdom." True to the motto of the symposium, both keynotes circled around power and energy consumption as central constraints for the design of electronic systems. The special session "Energy-Efficient ML Acceleration: From Technologies to Circuits and Systems" organized

Digital Object Identifier 10.1109/MDAT.2023.3324518
Date of current version: 22 January 2024.

by Partha Pande picked the energy efficiency of machine-learning accelerators as the central theme. A concluding panel, organized by Massoud Pedram and moderated by Ajay Joshi, took on the controversial topic of general artificial intelligence and spurred a lot of intense discussion. Machine learning was also an important topic in many technical presentations. Still, ISLPED 2023 continued to hone its traditional topics of power-relevant aspects in technology, circuit, architecture, and system design, also covering CAD methodologies and hardware security.

The design contest served as a particular focus point of discussion and interaction. Seven teams presented very innovative design solutions ranging from hearing aids to object detection in nanodrones.

115 DELEGATES ENJOYED the setting, the content, and the interaction as evidenced by the positive and even enthusiastic feedback that we received. They also appreciated the location of the venue in the center of the city with all its charm and activities. ISLPED 2023 can be considered a successful contribution to the research community of low-power electronics design, and we are happy to pass over the token to the organizers of ISLPED 2024 which is planned to be in California, USA. ■

Axel Jantsch is a professor of SoC at TU Wien, 1040 Vienna, Austria. Jantsch has a master's and a PhD from TU Wien.

Swaroop Ghosh is an associate professor at Penn State, University Park, PA 16802 USA. His research interests include hardware security, quantum computing, and low-power circuits. Ghosh has a BE from IIT, Roorkee, India, and a PhD from Purdue University, Lafayette, IN, USA.

Umit Ogras is an associate professor in the Electrical and Computer Engineering Department at the University of Wisconsin–Madison, Madison, WI 53706 USA. His research interests include low-power design and heterogenous manycore processing. Ogras has a PhD in electrical computer engineering from Carnegie Mellon University, Pittsburgh, PA, USA. He is a Senior Member of IEEE.

Pascal Meinerzhagen is a senior staff research scientist at Circuit Research Lab, Intel Corporation, 3074 Muri bei Bern, Switzerland. He currently leads AI/ML-based yield optimization of standard cells, IPs, and Intel products. Meinerzhagen has a PhD in electrical engineering from EPFL, Switzerland. He is a Member of IEEE.

■ Direct questions and comments about this article to Axel Jantsch Institute of Computer Technology, TU Wien, 1040 Vienna, Austria; axel.jantsch@tuwien.ac.at.