



48th International Symposium on Computer Architecture



ISCA 2021

Worldwide Event

June 14-19, 2021

Message from the Industry Track Chair

<https://iscaconf.org>

Message from ISCA 2021 Industry Track Program Chair

It is my great privilege and honor to serve as the Industry Track Program Chair for the 48th ACM/IEEE International Symposium on Computer Architecture (ISCA-48), 2021. This is the second time ISCA hosts a program session dedicated to papers on Industry products. Following the same vision and practice of the first Industry Track inaugurated and chaired by Dave Patterson last year, the Industry paper session continues the mission aimed to provide a venue for sharing the retrospective and practical learnings from design experiences of real industry products.

The Industry track employed a separate submission process from the regular paper track. To allow more time for industry papers to go through their respective, internal review process, the deadlines for abstract and paper submission were deliberately deferred by seven weeks post the deadlines of the regular paper track. 15 domain experts --- 9 from industry, 3 from academia, and 3 with dual industry/academic affiliation--- accepted our invitation to serve in the program committee as listed below. In addition to balance the PC presence from both industry and academia, our invitation also considered gender and geographical diversity.

Newsha Ardalani	<i>Facebook</i>	Gabriel Loh	<i>AMD</i>
Jason Clemons	<i>Nvidia</i>	Tulika Mitra	<i>Nat'l Univ. Singapore</i>
Joshua Fryman	<i>Intel</i>	Emre Ozer	<i>ARM</i>
Mark D. Hill	<i>Microsoft & Wisconsin</i>	David Patterson	<i>Google & UC Berkeley</i>
Engin Ipek	<i>Qualcomm</i>	Valentina Salapura	<i>AMD</i>
Nam Sung Kim	<i>Samsung & UIUC</i>	Sreenivas Subramoney	<i>Intel</i>
Hai "Helen" Li	<i>Duke</i>	Jinjun Xiong	<i>IBM</i>
Jing "Jane" Li	<i>UPenn</i>		

We received 19 solid submissions across different product sectors from a good mix of industries, from high-performance processors, GPU, mobile SoC, DRAM, AI/ML accelerators, cloud compute platforms, storage systems, and hardware-software co-designed hyperscaler systems. The review process was kicked off on Feb 19 and each paper was assigned and reviewed by at least six PC members. For the review workload, each PC member reviewed between 7 to 8 papers and was given five weeks to complete their reviews. After closing the review period, the authors had three days to rebuttal with an option of revising their papers followed by three-day online discussion among the entire PC prior to the virtual PC meeting.

13 out of 15 PC members joined the virtual PC meeting on March 1. Two members having last-minute urgent conflicts could not attend but joined online discussion and conveyed their stance on the papers they'd reviewed. 12 out of 19 submissions including the top-ranked papers were thoroughly discussed during the virtual PC meeting that lasted for 4.5 hours. At the end, the PC selected five strong papers to appear in the ISCA-48 program and recommended another five to the IEEE Micro Special Issue on Commercial Products 2021. The accepted ISCA papers are listed below. The topics represent diverse industry products including accelerator, microprocessor, contemporary chip integration approach, and DRAM.

- "Ten Lessons From Three Generations Shaped Google's TPUv4i," Google
- "Sparsity-Aware and Re-configurable NPU Architecture for Samsung Flagship Mobile SoC," Samsung
- "Energy Efficiency Boost in the AI-Infused POWER10 Processor," IBM

- “Hardware Architecture and Software Stack for PIM Based on Commercial DRAM Technology,” Samsung
- “Pioneering Chiplet Technology and Design for the AMD EPYC™ and Ryzen™ Processor Families,” AMD

The PC also held a post-mortem discussion online to summarize the learning during the review process and document down our feedback in a shared document for future program chairs for improvement looking forward.

This journey will not be accomplished without the help and support from many others. I would like to thank the following colleague who lent their hands unselfishly in various ways during the entire paper selection process, they include:

- The fantastic 15 PC members for their time and outstanding contributions to this program.
- Dave Patterson (Google and UC Berkeley) for sharing his experiences of the first Industry Track, vision, and insightful guidance on how to run the Industry Track.
- Lizy John (UT-Austin and ISCA-48 PC chair) for her continuing support for the Industry Track and her lightning response to every question I asked. Lizy also helped a great deal to put together the IEEE Micro Special Issue on Commercial Products 2021 for those great papers that we could not accommodate in the regular ISCA program.
- Damla Şenol Çali (CMU) for playing the essential role for figuring out those intricate knob settings on HotCRP website and moderating our virtual PC meeting.
- Bagus Hanindhito (UT-Austin) for sharing experiences in using HotCRP to moderate a PC meeting.
- Saugata Ghose (UIUC) for his assistance for all event communication on the ISCA website.
- Xiaodong Wang (Facebook) for his assistance on final paper preparation.
- The ISCA-48 Steering Committee, in particular, Babak Falsafi (EPFL) and Josep Torrellas (UIUC), who provided their advice on my role as the Program Chair for the Industry Track.

I hope you enjoy the program we put together for the ISCA-48 Industry Track. We anticipate these works will provide great insight and useful development learning to the research community on real, contemporary industry products.

Hsien-Hsin Sean Lee, *Facebook*
Industry Track Program Chair