

# Did ML Chips Heat Up the Chip Design Arena?

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■ **WELCOME TO THE** March/April 2020 issue of *IEEE Micro*. This issue features selected articles from the 31st Hot Chips Symposium, held at Stanford University in August 2019. The Memorial Auditorium at Stanford was crowded with record attendance eager to hear on the newest emerging chips. Whether it is machine learning acceleration or sheer increase in compute ability, the chip design arena has become hotter than ever. A lot of money is pouring into designing special purpose and general purpose chips. *IEEE Micro* is pleased to present for our readers selected articles based on the presentations at the Hot Chips Symposium. Christos Kozyrakis of the University of California, Berkeley and Ian Bratt of ARM served as guest editors for this issue. They have compiled an excellent selection of articles on emerging chips and systems from the Symposium, including articles from Tesla, Habana Labs, NVIDIA, AMD, ARM, and Ayar Labs. Please read the Guest Editors' Introduction to get a preview of the seven papers, which include two articles on machine learning acceleration, one on machine learning benchmarks, two on high-end chips from AMD and ARM, an article on the newest GPU from NVIDIA, and one on optical die-to-die interconnects. Thanks to the editors, authors, and reviewers who worked hard to put this issue together.

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In addition to the seven Hot Chips articles, this issue also features a Micro Economics column by Shane Greenstein, "Expertise at our Fingertips," discussing how crowdsourced Wikipedia has rendered Encyclopaedia Britannica obsolete. Please enjoy this article that presents a comparison of Wikipedia and Encyclopaedia Britannica on cost, reliability, coverage, contributor base, ease of use, etc.

Let me also provide an overview of what to expect in upcoming issues. The May/June issue will be the popular "Top Picks" Special Issue which presents the best of the best from papers in computer architecture conferences in 2019. Prof. Hyesoon Kim of Georgia Tech and a selection committee from industry and academia have selected 12 papers from about 100 articles that were submitted in response to the Top Picks call for papers. Readers can look forward to an amazing collection of excellent articles in May/June.

Many thematic special issues are planned for the remainder of 2020. Themes include Agile/Open Source Hardware, Biology Inspired Computing, Machine Learning for Systems, and Chip Design 2020. The July/August issue will be a Special Issue on "Agile/Open Source Hardware." Trevor Carlson from the National University of Singapore and Yungang Bao from ICT (China) will be guest editing this special issue. The "Biology-Inspired Computing" theme will be guest edited by Abhishek Bhattacharjee from Yale University. Milad Hashemi of Google and Heiner Litz of

University of California, Santa Cruz will guest edit the “Machine Learning for Systems” theme. The year will conclude with themes “Chip Design 2020” guest edited by Prof. Jaydeep Kulkarni of the University of Texas, and “Commercial Products 2020” guest edited by David Patterson and Sophia Shao of University of California, Berkeley.

We invite readers to submit to these Special Issues. Please find the open calls at

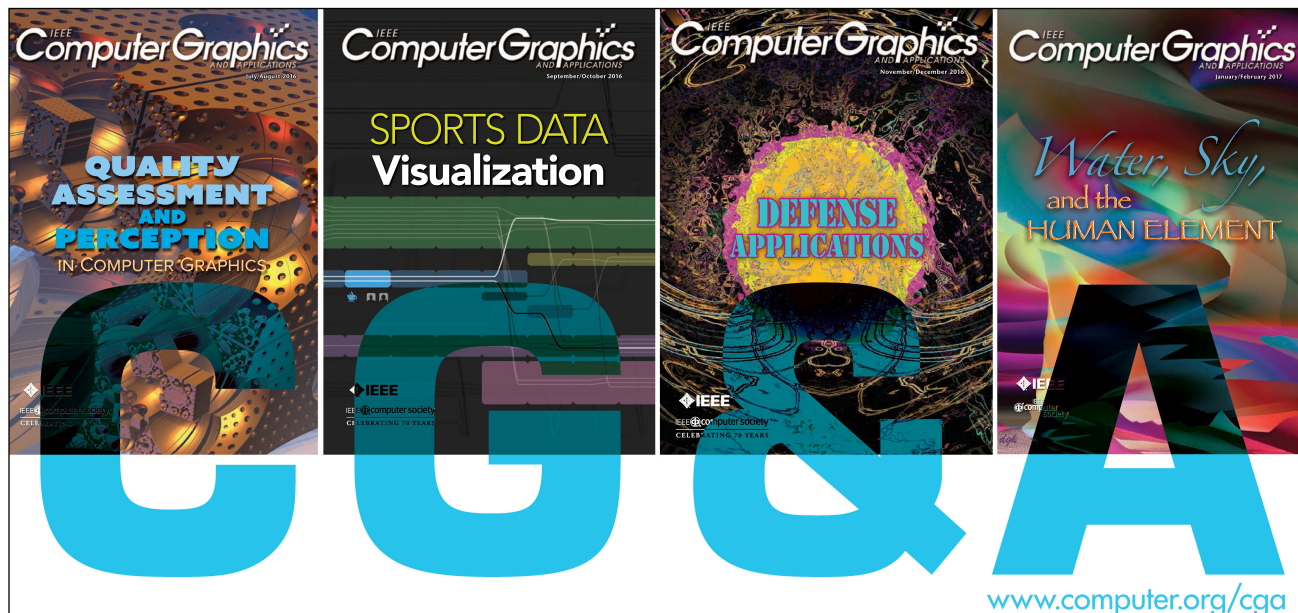
- 1) <https://www.computer.org/publications/author-resources/calls-for-papers>
- 2) <https://www.computer.org/digital-library/magazines/mi/call-for-papers-special-issue-on-commercial-products-2020>

- 3) <https://www.computer.org/digital-library/magazines/mi/call-for-papers-special-issue-on-chip-design-2020>

*IEEE Micro* is interested in submissions on any aspect of chip/system design or architecture.

Hope you enjoy the articles presented in this issue. Happy reading!

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