

From the Editor-in-Chief

Top Picks

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■ **WELCOME TO THE** May/June 2019 issue of *IEEE Micro*, the Top Picks issue, which presents to you a selection of 2018 conference articles that have the most potential to influence the work of computer architects in the near future. *IEEE Micro* has had this tradition of evaluating papers from the previous year's architecture conferences and selecting the papers with the most novelty and potential for long-term impact. *IEEE Micro* has selected such a compendium of papers for the last 15 years, and the magazine is upholding the tradition this year as well. Any article published in top architecture conferences during 2018 was eligible to compete for the Top Picks honor. We received 123 submissions, which made the selection process very challenging.

Sandhya Dwarkadas (University of Rochester) chaired this year's selection committee. Sandhya and 32 experts from academia and industry worked hard to identify 12 Top Picks and 11 honorable mention articles. Authors of an article recognized as a Top Pick were invited to prepare that article for inclusion in this special issue. The articles in this special issue are intended to be for a broader audience

and hence typically are more high level than the original conference articles. These articles also focus more on their potential impact. The honorable mentions are high quality articles that unfortunately could not be included in this special issue due to space constraints. They are listed in the Guest Editor's Introduction. Interested readers can locate them in the conference proceedings or IEEE/ACM Digital Library.

The purpose of Top Picks is multifold. First and foremost, Top Picks was originally instituted to present the "best of the best" of the preceding year's architecture research contributions to a broader audience including industry and other

fields. A second goal of Top Picks is to recognize excellent research in the field and bestow this honor on researchers who conducted the outstanding research that resulted in these articles. It is critically important for our field to honor our budding researchers and help them shape their careers. The Top Picks honor has been seen to be instrumental in achieving faculty positions, leading research positions in industry, and prestigious research grants. I also hope that the Top Picks articles help beginner

graduate students to understand the state of the art of the field as they are pondering on topics to work for their Ph.Ds.

Special thanks go to Sandhya Dwarkadas, who coordinated the Top Picks selection process.

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Sandhya and the selection committee members spent countless hours during the Christmas and New Year season to evaluate the submissions, and conducted a face-to-face meeting and deliberated to perform this important selection. I want to express my sincere gratitude to Sandhya and the selection committee for their hard work.

A comprehensive article written by Sandhya Dwarkadas serves as an excellent introduction to the compendium.

I want to congratulate all the Top Picks authors for their fantastic work. I hope that these works have significant impact on future computer systems.

In addition to the Top Picks articles, this issue also features a Micro Economics column by Shane Greenstein, titled “Misapplied metaphors in AI policy.” Greenstein writes about policy debates on artificial intelligence, how innovation from the edges works in the North American System of Universities, and the history of Government subsidies for invention. He closes the article with an argument for increased government funding of AI research and how it might lead to unanticipated gains that no futurist could foresee.

A golden age is coming for computer architecture with the variety of emerging technologies, proliferation of machine learning and neural networks, and emerging software applications. I hope this special issue is thought provoking for our readers and helps shape the field for many years to come.

I also want to steer your attention toward the upcoming Special Issue on Monolithic 3-D Architectures, which will be coordinated by Vijay Narayanan of Penn State. Consider submitting to the call at <https://www.computer.org/digital-library/magazines/mi/call-for-papers-ieee-micro-special-issue-on-monolithic-3d-architectures>. Please also consider submitting articles to *IEEE Micro* regular issues. *IEEE Micro* is interested in submissions on any aspect of chip/system design or architecture.

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

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