Building on 35 Years toward a Vibrant Future

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Erik Altman leaves *IEEE Micro* in great shape as he hands off the mantle of editor in chief to me. Under Erik's leadership and that of his predecessors, David Albonesi and Pradip Bose, *IEEE Micro* has covered topics that are relevant and timely, while balancing technical depth and insight to be of interest to a broad group of people, including experts and practitioners in both academia and industry. My goal as an incoming editor in chief is to continue and, if possible, strengthen *IEEE Micro*'s mission. I'm grateful and honored to be selected as the new editor in chief, and I want to humbly thank the selection committee for their confidence in me. I also want to explicitly thank Erik Altman, and his predecessors, for having shaped up *IEEE Micro* to its current state—this makes the prospect of being the editor in chief a true privilege.

IEEE Micro's mission is to provide a highly relevant, easily accessible, and top-tier periodical. *IEEE Micro* fulfills a very important and unique role in the publication landscape: top-tier computer architecture conferences publish highly technical, highly quantitative 10- to 12-page research contributions; transactions and journals publish even more extensive and lengthy archival articles; *IEEE Computer Architecture Letters* publishes short four-page papers with a specific emphasis on early ideas. *IEEE Micro* fills a gap by publishing eight- to 10-page articles that are slightly less technical and

less quantitative, while being insightful, slightly more qualitative, with a high tutorial value, and up to date with current trends. This unique mission has allowed *IEEE Micro* to attract a broad readership among both academics and practitioners who want to keep up with new results and trends in the growing field of computer architecture. I will do whatever is needed to keep on fulfilling, and if possible strengthening, this role, as I believe it is vitally important to our community and readership.

IEEE Micro, along with the other IEEE Computer Society magazines, is undergoing a major change by going digital as of January 2015. The driving factors for moving toward digital magazines are to accommodate changing reader preferences and reduce cost. Moving to a digital format offers a number of opportunities, which will hopefully further increase our readership. It enables us to provide new forms of content, including supplemental material such as hyperlinks to relevant websites and articles, video, and so on. In addition, the production process of a digital magazine is less costly than print editions, which lets us provide *IEEE Micro* digitally to our readers at a lower cost—in fact, the subscription cost went down from 2014 (print) to 2015 (digital). Subscribers who prefer reading *IEEE Micro* in print can still do so via print on demand, but at a higher cost.

I plan to continue *IEEE Micro*'s tradition of publishing special issues with

specific call for papers and guest editors. Special issues enable steering the topics covered in the magazine so that the themes are highly relevant and timely. Furthermore, special issue themes need to be broad enough to attract sufficient submissions while being of interest to our diverse readership. Themes covered should focus on the broad scope of chip and silicon systems, with a specific emphasis on the design, performance, or application of microprocessor systems. Furthermore, the collection of special issue themes should be diverse enough to accurately represent the broad community and its interests. Topics of interest include, but are not limited to, microprocessor design for mobile computing and datacenters; design techniques to deal with power, energy, and thermal efficiency, security, process variability, and reliability; new technologies and their impact on microarchitecture; and hardware/software interactions.

The first special issue of this year covers mobile systems, with Calin Cascaval as the guest editor. Mobile computing, without any doubt, is here to stay, and is the de facto personal computing paradigm of today. It incurs a significant departure from traditional computing, with always-on, always-connected devices, enabling a wealth of new opportunities, while being resource-constrained in terms of power, energy, and thermal aspects and storage. Furthermore, the flood of personal data generated is exploding,

which requires seamless interactions with the cloud. Dealing with these new issues calls for an *IEEE Micro* special issue, which I am pleased to introduce here. I want to sincerely thank Calin for having served as the guest editor of this interesting and timely theme issue. See Calin's guest editor's introduction for more information regarding the articles included in this issue.

The March/April issue will feature selected articles from the Hot Chips conference held in Cupertino, CA, in August 2014. Sam Naffziger and Guri Sohi are the guest editors for this special issue, and are in the process of compiling an excellent selection of contributions on today's most advanced microprocessor designs.

In May/June, Luis Ceze and Karin Strauss will be the guest editors of the Top Picks special issue. Top Picks has become a very prestigious vehicle to recognize the most significant research papers in computer architecture based on novelty and potential for long-term impact. A selection committee chaired by Luis and Karin and consisting of 28 experts from academia and industry is currently reviewing a record number of 110 submissions.

For the July/August special issue on heterogeneous computing, guest editors Dean Tullsen and Ravishankar Iyer will be selecting high-quality contributions in the broad area of heterogeneous computing systems, ranging from systems-on-chip (SoCs) with specialized hardware accelerators, hybrid CPU/GPU architectures, and single-ISA heterogeneous multicores with different core types, to multi-ISA heterogeneous multicores.

For the September/October special issue on alternative computing designs and technologies, guest editors Olivier Temam and Luis Ceze are soliciting high-quality contributions on alternative computing approaches that break away from traditional CPUs with radically different designs using mature CMOS technologies, and/or designs built with radically different fundamental technologies. Sub-

missions will be accepted until 5 March 2015.

The final issue of the year will be a general interest issue, for which we are continuously soliciting contributions. In addition, we are still accepting submissions for the harsh chips special series, which is guest edited by Augusto Vega, Alper Buyuktosunoglu, and Pradip Bose. See *IEEE Micro*'s auxiliary site (https://sites.google.com/site/ieeemicro/home) for the relevant call for papers.

Before concluding this column, I'd like to explicitly thank a number of people. Erik Altman very kindly kept the pipeline of issues in excellent shape while I was getting up to speed. The first three issues of 2015 are a result of Erik's vision. I am grateful to Erik not only for managing these issues, but also for involving me in many discussions and decisions, for encouraging me to pursue the award testimonies when I first pitched this idea, and for helping me get up to speed as quickly as possible. As a token of appreciation and to guarantee continuity, I'm delighted to announce that Erik will be serving on the advisory board. I want to thank the *IEEE Micro* staff—Molly Gamborg, Bonnie Wylie, Robin Baldwin, Rachel McMurray, and Emily Lowrance-Floyd—as well as the advisory and editorial boards for the warm welcome upon my selection as the new editor in chief. Most importantly, I want to thank the authors for their

contributions, irrespective of whether their submissions were accepted—they are the lifeblood of the magazine—as well as you, the reader, for your continued support and making *IEEE Micro* a vibrant magazine. I hope you will continue to find *IEEE Micro* interesting and inspiring.

IEEE Micro is entering its 35th year. Having started in 1980, the magazine is currently building on a very solid past. In fact, *IEEE Micro* is one of the oldest active IEEE Computer Society magazines. As suggested by the set of topics covered in 2015, there is a myriad of possibilities for future themes and contributions. For the magazine's vitality to continue, we need strong continued input from the community in the form of articles, reviews, columns, ideas, editing, and many more ways. Please send me suggestions you may have regarding future themes and new forms of content that could be of interest to the community and can be easily integrated in the new digital format. I look forward serving as the editor in chief, and to working with and hearing from you.

Lieven Eeckhout
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