



IEEE Council on Electronic Design Automation

## ***A Word from the President***

I feel so privileged and honored to be leading CEDA. We have an excellent group of volunteers on the executive committee dedicated to serving the EDA community with great publications, conferences, and initiatives. Many new initiatives are underway, and I am happy to provide a quick note on them, along with some news.

First, there is considerable activity in the area of rebooting computing. The Fourth Rebooting Computing Summit took place 9-11 December 2015 in Washington, D.C. *Computer* magazine devoted its [December 2015 issue](#) to rebooting computing. In addition, a conference on this topic is being planned for October 2016. Finally, the US Intelligence Advanced Research Projects Activity (IARPA) is planning a Proposers' Day for SuperTools (<https://www.fbo.gov/notices/c006e5f66136c100b9cd1cc880b045e7>). SuperTools is a five-year program to develop a comprehensive set of EDA tools that can enable VLSI design of superconducting electronics.

Second, as techniques for analog computing, approximate computing, and probabilistic computing become more prevalent, researchers are looking for design automation techniques in these areas, especially verification and validation. CEDA's own [initiative](#) to look at EDA evolution was presented at the 2015 International Conference on Computer-Aided Design (ICCAD). This initiative details the areas that the EDA community can explore beyond its current "e-boundaries."

In other news, a young faculty development workshop is in the works for the 2016 Design Automation Conference (DAC 2016) in Austin, Texas; CEDA is planning an expansion of chapters worldwide; and the China Computer Federation has promoted *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)* to its "A" list of journals.

I hope to see you at a CEDA conference. Please drop me a note if you'd like to volunteer for one of our initiatives.

*Shishpal Rawat, IEEE CEDA President*

## ***CCF Gives TCAD an "A"***

On 21 December 2015, the China Computer Federation (CCF) announced the latest modification in its recommendation lists for international journals and conferences. *TCAD* has been promoted to an "A" journal in this modification.

The modification process includes three stages: nominations; reviews and recommendations from technical committees; and voting by the selection committee based on the quality and impact of the nominated journals and conferences. CCF received a total of 135 nominations from 23 technical committees, and *TCAD* is one of only two journals promoted to the "A" level.

*TCAD* is published monthly by CEDA and focuses on computer-aided design of integrated circuits and systems composed of analog, digital, mixed-signal, optical, or microwave components. The current editor-in-chief is Vijaykrishnan Narayanan (Pennsylvania State University).

## ***Evolving EDA beyond Its E-Roots***

A special session at ICCAD 2015 presented initiatives and the current status of a new CEDA technical activity group (TAG) led by Andrew B. Kahng and Farinaz Koushanfar (University of California, San Diego). The special session, titled "Evolving EDA beyond Its E-Roots," focused on recent efforts to systematize knowledge, trends, metrics, and visions that can help the EDA community move beyond its e-boundaries. The aim of the session was to familiarize the community with the CEDA TAG dedicated to this subject, its initial methodologies and results, and how to participate.

The session included four short talks on the TAG as a whole and the three study teams within the initiative. These were followed by a panel discussion. The first study team investigates and synthesizes prior organized efforts to establish visions, roadmaps, EDA research centers, and so on. The aim is to systematically categorize previous efforts, and build on their results and conclusions. The second study team focuses on develop-

ment of metrics and impact-assessment methodologies for design automation research and innovation. The third study group works toward clarifying a vision and a set of recommendations for moving forward as a design automation community. This group addresses relevant state-of-the-art automation problems in various emerging fields that are fertile ground for research, entrepreneurial activity, and further development of the group's methodologies.

The panel participants were Yiran Chen (Univ. of Pittsburgh), Naehyuck Chang (KAIST), Jim Huang (HP Labs), and David Pan (Univ. of Texas at Austin), with Steven Levitan (Univ. of Pittsburgh) as the moderator. The first three panelists were the winners of the Design Automation (DA) Perspective Challenge (collocated with DAC 2015), which solicits community input via a design automation vision competition. More information is available at <http://vlsicad.ucsd.edu/DAPerspectiveChallenge>.

The ICCAD special session was very well-attended and dynamic; many participants in the audience expressed interest in the group activities, and several EDA researchers from industry and academia volunteered for future participation.

*Farina Koushanfar and Andrew Kabng (UC San Diego)*

### ***CEDA Past-President Visits CEDA Chapters***

CEDA past-president Sani Nassif visited CEDA chapters in Pennsylvania, Beijing, Seoul, Shanghai, and Hong Kong in the fourth quarter of 2015. Each of the visits included meetings with chapter officers and members, and an [introductory talk](#) on the IEEE and CEDA. Each chapter is making plans for 2016 activities that will be financially supported by CEDA and may include invited lectures (from the CEDA Distinguished Lecturer program), local workshops and seminars, and membership development. The goal of the visits was to energize the CEDA chapters and encourage activity in 2016.

Chapters are an important part of all IEEE societies, as they encourage and facilitate local involvement with activities customized to each region. Chapters are particularly important in attracting participation from students, as well as professionals who might be interested in career development and external visibility.

Watch for further news from our CEDA chapters in this newsletter throughout the year!

### ***Papers in IEEE Embedded Systems Letters***

The top-five accessed articles from *IEEE Embedded Systems Letters* in December 2015 were as follows:

- [“Motion Noise Cancellation in Heartbeat Sensing Using Accelerometer and Adaptive Filter,”](#) by S. Ardan, S. Moghadami, and S. Jaafari
- [“Wearable Camera- and Accelerometer-Based Fall Detection on Portable Devices,”](#) by K. Ozcan and S. Velipasalar
- [“An Ultra-Lightweight Transmitter for Contactless Rapid Identification of Embedded IP in FPGA,”](#) by L. Bossuet, P. Bayon, and V. Fischer
- [“A Formal Verification Methodology for FPGA-Based Stepper Motor Control,”](#) by S. Jabeen et al.
- [“WeNA: Deterministic Run-Time Task Mapping for Performance Improvement in Many-Core Embedded Systems,”](#) by L.-T. Huang et al.

Upcoming Conferences (Yao-Wen Chang, <a href="mailto:ywchang@ntu.edu.tw">ywchang@ntu.edu.tw</a> )	
<a href="#">GLSVLSI</a>	Boston, 18-20 May 2016
<a href="#">DAC</a>	Austin, Texas, 5-9 June 2016

Find us online at <http://ieee-ceda.org>.



***IEEE Embedded Systems Letters*** is open for submissions. Visit [mc.manuscriptcentral.com/les-ieee](http://mc.manuscriptcentral.com/les-ieee).

***IEEE Design & Test*** is open for submissions. Visit [mc.manuscriptcentral.com/dandt](http://mc.manuscriptcentral.com/dandt) and [ieee-ceda.org/publications/d-t/paper-submission](http://ieee-ceda.org/publications/d-t/paper-submission).

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