



## IEEE Council on Electronic Design Automation

### *A Note from CEDA's New President*

I would like to thank Donatella Sciuto for her leadership during the past two years. During that time, CEDA consolidated its position as a financially sound IEEE council managing EDA interests via conferences, journals, awards, and technical initiatives. We added the Asia and South Pacific Design Automation Conference (ASP-DAC) to our other financially sponsored conferences in 2014 (for a total of 11 conferences). We have new EICs for *IEEE Transactions on Computer-Aided Design (TCAD)* and *IEEE Design & Test*, as well as several new steering-committee members for *IEEE Embedded Systems Letters*. In addition, CEDA will cosponsor two new IEEE journals: *IEEE Journal on Exploratory Solid-State Computational Devices and Circuits* and *IEEE Transactions on Multiscale Computing*.

We continue to recognize our leaders through the Donald O. Pederson Award, A. Richard Newton Award, Early Career Award, and Phil Kaufman Award. This year, we had two Early Career Award recipients (including the first ever from industry). In our Distinguished Lecture Series, prominent experts present unique views on contemporary EDA topics at the Design Automation Conference (DAC) and the IEEE/ACM Conference on Computer-Aided Design (ICCAD).

CEDA also provides financial and organizational assistance to workshop organizers seeking to explore new areas in the design automation area. Moreover, CEDA facilitates EDA activities in member societies—particularly those outside mainstream IC areas (such as sponsorship of the Modeling of Biological Systems Workshop). We'd like to invite our leaders to propose workshops and conferences in novel areas. Of course, we also enjoy involving students in CAD competitions, and we sponsor the CAD Contest at ICCAD, which has seen a 55% increase in participation recently.

We have overhauled our website (<http://www.ieee-ceda.org>) with new information, including a detailed manual about the [IEEE CEDA conference organization process](#), which will make it easier for conference organizers to process their paperwork.

I would like CEDA to build upon these successes. Among other things, we will continue to nurture the Internet of Things Initiative via our technical sponsorship and participation in the IEEE World Forum on Internet-of-Things (March 2014). We will also continue our work to support EDA researchers and professionals in all parts of the world. We will do this by strengthening our conferences and journals, exploring new and adjacent opportunities as they arise, and seeking novel ways to connect with and inform our constituents. Please let us know if CEDA can be of any assistance to you.

*Sani Nassif, CEDA President*

### **Planning DAC 2014**

With the Design Automation Conference only a few months away, the program is starting to come together. This year, DAC will feature three new tracks (Automotive, IP, and Security), while also continuing to present best-in-class solutions advancing EDA and embedded systems and software. Here are a few sneak previews.

### **Special sessions**

In DAC's special sessions, key players from industry and academia highlight hot topics and raise awareness of key challenges faced by the EDA community. This year, topics will range from upcoming and future transistor technologies to the interconnect crisis, challenges and opportunities of designing heterogeneous systems, and on-chip cortical computing and embedded resiliency.

Examples include SRC's efforts in emerging FET technologies, which could re-enable voltage scaling (presented by SRC's Director of Nanoelectronics Research Initiative, Thomas Theis); scalability of interconnects for 10 nm and beyond (by James Clarke, Manager of Research for Metals and Dielectrics at Intel); design challenges facing integrated heterogeneous systems (by Greg Sadowski, AMD Fellow); multilayer dependability for memory subsystems (by Nikil Dutt, UC Irvine); and the famous hierarchical temporal memory (HTM) model for learning hardware (presented by Subutai Ahmad, VP Engineering at Numenta).

## Technical panels

Technical panels address key issues and controversial topics in today's EDA and electronics. For example, the "Invasion of the Body Sensors" panel will discuss the technology and ethical challenges of implantable and wearable medical devices, and their barriers to public acceptance. Two panels will discuss design at advanced technology nodes, including the impact on EDA tools and flow, and how many respins to target when designing with highly volatile transistors. Another panel will discuss promising technology proposals such as EUV, 450 nm, 3D, T-FET, and nanowires. Panels on verification and cyber-physical system design are also planned.

## Keynotes

With several new tracks being introduced, DAC will host a total of five engaging, thought-provoking keynotes, including those by Hossein Yassaie (Imagination Technologies) and Cliff Hou (TSMC), and a dual keynote on Automating the Automobile by Jim Tung (MathWorks) and James Buczkowski (Ford Motor Company).

Hosted in San Francisco, this year's DAC will not only remain on the forefront of electronic design but will also offer outstanding training, education, exhibits, and networking opportunities. See <http://www.dac.com> for details.

## VLSI-SoC 2013 Report

The IFIP/IEEE International Conference on Very Large Scale Integration (VLSI-SoC) explores the state of the art and the latest developments in VLSI and SoCs. The 21st annual VLSI-SoC was held in Istanbul, Turkey, on 6-9 October 2013. The conference program included three top-notch keynotes, three embedded tutorials, one panel, 15 regular sessions, two special sessions, and a PhD Forum.

The regular sessions comprised 48 full papers and 20 short papers. Both regular and short papers were complemented by oral presentations and are included in the conference proceedings. The two special sessions included 15 papers. The PhD Forum included 12 papers.

This program was the result of a very competitive selection process, starting with 244 submissions, not counting the PhD forum and embedded tutorials. The conference continues to follow its track record of being highly selective to ensure a high-quality technical program, with a full-paper

acceptance rate of 20%, increasing slightly to 32% when short papers and special-session papers are included.

Keynotes included "VLSI 2.0: R&D Post Moore," by Sani Nassif (IBM Austin Research Lab); "The Run-Time System: Part of the OS or Part of the Chip Design?" by Yale Patt (University of Texas at Austin); and "Data Mining Trends in VLSI Test," by Magdy Abadir (Freescale Semiconductor).

The winner of the Best Paper Award was "A Real-Time 720p Feature Extraction Core Based on Semantic Kernels Binarized," by Michael Schaffner, Pascal Hager, Lukas Cavigelli, Frank Gurkaynak, and Hubert Kaeslin (ETH and Disney Research, Switzerland). The PhD Forum Best Presentation Award winner was "Systematically and Quantitatively Optimized Area- and Energy-Efficient Matrix-Decomposition Accelerators," by Upasna Vishnoi.

The next VLSI-SoC conference will be in Playa del Carmen, Mexico, on 6-8 October 2014. For details and the call for papers, see <http://www.vlsi-soc.com>.

## Papers in IEEE Embedded Systems Letters

The top-five accessed articles from *IEEE Embedded Systems Letters* in December 2013 were as follows:

- "[A Security Layer for Smartphone-to-Vehicle Communication over Bluetooth](#)," by A Dardanelli et al.
- "[Introducing New Localization and Positioning System for Aerial Vehicles](#)," by E. Mazidi
- "[Self-Adaptive Network-on-Chip Interface](#)," by R. Dafali, J.-P. Diguët, and J.-C. Creput
- "[Hardware-Assisted Detection of Malicious Software in Embedded Systems](#)," by M. Rahmatian et al.
- "[Improving the Trustworthiness of Medical Device Software with Formal Verification Methods](#)," by C. Li, A. Raghunathan, and N.K. Jha

Upcoming Conferences (David Aienza, <a href="mailto:david.atienza@epfl.ch">david.atienza@epfl.ch</a> )	
<a href="#">DATE</a>	Dresden, Germany, 24-28 March 2014
<a href="#">DAC</a>	San Francisco, 1-5 June 2014
<a href="#">GLSVLSI</a>	Houston, Texas, 21-23 May 2014

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

## IEEE COUNCIL ON ELECTRONIC DESIGN AUTOMATION

*President:* SANI NASSIF *President-Elect:* SHISHPAL RAWAT *Past President:* DONATELLA SCIUTO  
*Secretary:* AYSE K. COSKUN *VP Conferences:* DAVID ATIENZA *VP Finance:* SACHIN SAPATNEKAR  
*VP Publications:* HELMUT GRAEB *VP Publicity:* PATRICK GROENVELD  
*VP Strategy:* WILLIAM JOYNER *VP Activities:* YAO-WEN CHANG *VP Awards:* RADU MARCULESCU

*CEDA Currents is a publication of IEEE CEDA. Please send contributions to Jose L. Ayala ([jayala@fdi.ucm.es](mailto:jayala@fdi.ucm.es)).*

© 2014 IEEE. All rights reserved.