February 2011

Currents

IEEE Council on Electronic Design Automation

From the Desk of VP Technical Activities

The CEDA Technical Activities program has been busy on several fronts. Several new distinguished lectures have been added to our website, including "Semiconductor and EDA Industry" (by Lucio Lanza) and "Beyond von Neumann Computing" (by Steve Teig). These lectures were given to packed audiences at the 2010 International Conference on Computer-Aided Design (ICCAD) and the 2010 Design Automation Conference (DAC), respectively.

In his lecture, Lanza explained that although a company may mature, the industry keeps reinventing itself through new technologies (televisions, phones, and so forth). The computing industry needs predictable system engineering to undertake the necessary transformation. Teig's talk centered on a more physically aware, non–von Neumann machine that could offer higher performance and far more power-efficient computation. The videos on our website include detailed Q&A sessions for both lectures.

CEDA also ran a webcast of ICCAD's keynote, "Multi-scale Microscopy of the Nervous System: The Challenge of Imaging and Organizing Data Across Spatial Scales Spanning Twelve Orders of Magnitude" (by James C. Bouwer, physicist and principal development engineer at the University of California, San Diego). A replay of this webcast is available at ICCAD's website: http://www.iccad.com/2010/index.html.

Interest in CEDA chapters is growing. Another chapter in Taiwan, the Taipei Section Council on Electronic Design Automation, has been added to the ranks. Many thanks go to Chung-Yang Huang for organizing it. Our plan is to support these chapters with invited talks by prominent industry and academic EDA researchers. You are welcome to start a chapter in your own geographical area. Valuable information regarding IEEE council chapters is available at http://www.ieee.org/chapters.

Finally, you are welcome to provide suggestions on areas in which you'd like CEDA to be more active. Please send suggestions to me at the following e-mail address.

Shishpal Rawat, VP Technical Activities, shishpal.s.rawat@intel.com

Call for Nominations for CEDA Early Career Award

CEDA is calling for nominations for the third annual IEEE CEDA Early Career Award. This award recognizes an individual who has made innovative and substantial technical contributions to the area of electronic design automation in the early stages of his or her career. This award will be presented at ICCAD 2011. Full IEEE members at any level (regular, senior, or Fellow) whose highest educational degree has been awarded no more than eight years before the date of the nomination deadline are eligible.

Contributions to the EDA field will be measured on the basis of technical merit and creativity in performing research, and will be assessed according to the published record of the individual and the references accompanying the nomination. The award is intended to be equally available to contributors from academic and industrial institutions. The specific criteria used will include the current and potential impact of the individual's contributions, as well as contributions to the profession at large.

The closing date for nominations is 15 April 2011.

The submission process is as follows. Anyone who is familiar with the individual's work can make a nomination. Please submit the nomination by e-mail to CEDA-EarlyCareerAward@ieee.org. The supporting material for the nomination should include the following:

- the name, affiliation, and contact information of the nominating individual;
- the nominee's biographical information, including education and employment history;
- the proposed citation (which IEEE CEDA may adjust); and
- three professional references (endorsements).

Please also include one or both of the following:

CEDA Currents is a publication of IEEE CEDA. Please send contributions to Jose L. Ayala (jayala@fdi.ucm.es) or Rajesh Gupta.

- a selection of no more than three papers published by the nominee, with comments by the nominator limited to 100 words per paper; and
- a description of projects led by or contributed to by the nominee, with clear articulation of the role the nominee played and the relevant contributions.

For more information, go to http://www.c-eda.org.

VLSI-SoC 2010 Conference Report

The 18th IEEE/IFIP International Conference on VLSI and System-on-Chip (VLSI-SoC) was held 27-29 September 2010 in Madrid. This series of international conferences is sponsored by International Federation for Information Processing (IFIP) Technical Committee 10, Working Group 10.5; IEEE CEDA; and the IEEE Circuits and Systems Society.

VLSI-SoC explores the state of the art and new developments in very large-scale integration (VLSI), SoCs, and their designs. The purpose of this conference is to provide a forum to exchange ideas and show industrial and research results in the fields of VLSI and ultra-low-scale integration (ULSI) systems, SoC design, VLSI CAD, and microelectronic design and test. The 2010 conference gave special emphasis to the research area of "energy efficiency of computing and green computing."

A total of 199 papers were submitted to VLSI-SoC , of which 60 papers were accepted for oral presentation (a 30% acceptance rate). With poster papers, a total of 82 papers were presented. The final technical program consisted of 41 full presentations and 19 short presentations in 16 oral sessions, and 22 posters in two poster sessions, as well as one PhD forum session.

VLSI-SoC 2010 included an exciting set of four invited speakers on a broad range of issues related to VLSI and SoC design evolution, as well as emerging nanoelectronics and bio-inspired technologies.

On the first day, the two keynote speakers were Subhasish Mitra (Stanford University) and Sani Nassif (IBM). They presented the latest trends in VLSI DFT and future technology roadmap perspectives for IC design. Giovanni De Micheli (EPFL) then presented the different components of forthcoming nanosystems, including rethinking the underlying devices, circuits, architectures, and applications. Finally, Nikil Dutt (University of California, Irvine) presented novel abstractions for neural circuits and frameworks for modeling, simulating, and analyzing spiking neural networks.

In addition, the technical program included two invited special sessions on green computing and many-core architectures, to provide a deeper understanding of the technical aspects of the special-topic emphasis of this year's conference. There was also a special PhD and GOLD (graduates of the last decade) luncheon session in which renowned scientists presented their views to PhD students and young faculty members and outlined good practices for a successful career in academia and industry.

The organizing committee, the technical-program-committee members, the speakers, and the 108 attendees made VLSI-SoC 2010 a very successful event.

Papers in IEEE Embedded Systems Letters

The top-five accessed articles from *IEEE Embedded Systems Letters* during October 2010 were as follows:

- "Design of a Low-Cost Underwater Acoustic Modem," by B. Benson et al.
- "Improving the Performance of Shared Memory Communication in Impulse C," by X. Jin et al.
- "High-Speed AES Encryptor with Efficient Merging Techniques," by I. Hammad et al.
- "Smartphone-Based Vehicle-to-Driver/Environment Interaction System for Motorcycles," by C. Spelta et al.
- "Hardware Resource Virtualization for Dynamically Partially Reconfigurable Systems," by C.-H. Huang et al.

Upcoming Conferences (Bill Joyner, william.joyner@src.org)

DATE	Grenoble, France, 14-18 March 2011
DAC	San Diego, Calif., 5-10 June 2011
MemoCODE	Cambridge, UK, 11-13 July 2011
PATMOS	Madrid, 27-30 September 2011
FMCAD	Austin, Texas, 30 Oct.-2 Nov. 2011

Find us online at www.c-eda.org.

IEEE Embedded Systems Letters *is open for submissions. Visit mc.manuscriptcentral.com/les-ieee*

CEDA Currents is a publication of IEEE CEDA. Please send contributions to Jose L. Ayala (jayala@fdi.ucm.es) or Rajesh Gupta.