November 2017 Currents

IEEE Council on Electronic Design Automation

Appointments in Publications Committees

At the end of 2017, Vijaykrishnan Nayaranan, Distinguished Professor of Computer Science & Engineering and Electrical Engineering at the Pennsylvania State University, USA, will complete his 4-year service as Editor-in-Chief (EIC) for the IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD). Vijay has not only done an excellent job in keeping up the quality of TCAD and the traditional EDA topics, he has also developed emerging topics like embedded systems, software and security at TCAD.

Likewise, Charles ("Chuck") Alpert, Senior Group Director at Cadence Design Systems, USA, will complete his 4-year service as Deputy EIC of TCAD. In this role he has succeeded in soliciting a variety of exciting keynote papers for TCAD.

Vijay and Chuck end their service after two terms according to the IEEE rules. CEDA expresses its warm thanks to Vijay and Chuck for their extraordinary service to TCAD, the flagship EDA publication.

CEDA happily announces that Rajesh K. Gupta, QUALCOMM professor in Computer Science and Engineering at UC San Diego, USA, has been appointed TCAD EIC for the term 2018-2019. Rajesh's research interests span topics that have come to be characterized under embedded and cyber-physical systems and recently under Internet-of-Things. Regardless of the title, the focus of his research has been on methods and tools to make things better (e.g., more energy efficient, reliable), or enable others (mostly designers, architects) to do things better. Rajesh is a Fellow of the IEEE and a Fellow of the ACM, he has been the founder and inaugural EIC of IEEE Embedded Systems Letters.

CEDA also happily announces that Sri Parameswaran, Professor and Program Director for Computer Engineering at the University of New South Wales, Australia, has been reappointed for the second two year term as EIC of the IEEE Embedded Systems Letters (ESL) 2018-2019. Likewise, Tulika Mitra, Professor of Computer Science at the School of Computing of the National University of Singapore, has been reappointed as Deputy EIC of ESL.

EDPS 2017 – A Great "New" Beginning

By Shishpal Rawat, President IEEE CEDA

While the 24th edition of EDPS was, as they say in its 24th year, it was in many ways a new beginning for the symposium.

As the design process has evolved and become more integrated with manufacturing to package more components in a die (Moore's Law), we brought in our manufacturing partners to describe how these new design and manufacturing processes could better work together to improve yield and HVM thereby reducing overall cost of the system.

SEMI became an associate sponsor of the event providing us with impeccable facilities to hold the symposium in Milpitas, CA. Time and location was moved from April, Monterey to Sept, Milpitas to come closer to many practicing engineers which allowed them to participate with minimal disruption to their busy work schedules.

We easily surpassed our attendance goal and ended up with a total of 81 attendees (with some attendees signing up at the door). The sessions presented thought-provoking subjects (machine learning, yield improvement, design acceleration and debug/validation) over the course of two days. The Q/A and follow up sessions led to interesting discussions and attendees enjoyed valuable networking opportunities between IC design and manufacturing experts. Our keynote speakers Antun Domic, Zoe Conroy, Jim Hogan and Pankaj Mehra provided insight into upcoming challenges from a global economic perspective to challenges in putting together a 5 nm design. The session speakers came from all over United States and from Taiwan and provided a very rich mix of topics challenging the present-day design, test and manufacturing engineers. You can find a detailed write-up here (courtesy Herb Reiter). The program along with the latest copy of the presentation by our speakers is available for download at the EDPS website.

CEDA Currents is a publication of IEEE CEDA. Please send contributions to José L. Ayala (contribution form).

IEEE JETCAS - CALL for PAPERS

Special Issue on "Energy-Quality Scalable Circuits and Systems for Sensing and Computing: from Approximate, to Communication Inspired and Learning-Based".

The historical 100X/decade energy down-scaling is currently being threatened by the slowing down of Moore's law, and the limited prospective energy gains from approaches that have been already exploited extensively. Major shifts from traditional sensing/processing paradigms are now mandatory, and new design dimensions and tradeoffs that enable further energy reductions need to be explored. The above challenges require a highly inter-disciplinary effort, as they lie at the intersection of circuits and systems, solid-state circuits, CAD, architectures, machine learning, signal processing (e.g., computer vision, audio), and the related communities.

Accordingly, the authors of this special issue will be invited to submit their paper contributions on the following and other topics related to energy-quality scalable systems: sensors and circuits with the capability to dynamically trade off energy and quality; lightweight methods for quality enhancement and graceful degradation; run-time quality sensing, control and adaptation at different levels of abstraction and in different sub-systems; relaxed sensor and circuit design via compensation of non-idealities; dynamically scalable approximate, communication-inspired, stochastic, learning-based circuits and systems; etc.

Manuscript submissions due: December 15th, 2017. More information at http://ieee-cas.org/pubs/jetcas.

Papers in IEEE Embedded Systems Letters

The top-five accessed articles from *IEEE Embedded Systems Letters* in August 2017 were as follows:

- "Energy Efficient Outdoor Light Monitoring and Control Architecture Using Embedded System," by Z. Kaleem, T.M. Yoon, and C. Lee
- "Arduino Debugger," by J. Dolinay et al.
- "Wearable Camera- and Accelerometer-Based Fall Detection on Portable Devices," by K. Ozcan and S. Velipasalar
- "Testing Autonomous Vehicle Software in the Virtual Prototyping Environment," by B. Kim et al.
- "Public Key Authentication and Key Agreement in IoT Devices With Minimal Airtime Consumption," by S. Sciancalepore et al.

Papers in IEEE Design and Test

The top-five accessed articles from *IEEE Design and Test* in August 2017 were as follows:

- "Approximate Computing: A Survey," by Qiang Xu et al.
- "Security and Privacy in Cyber-Physical Systems: A Survey of Surveys," by J. Giraldo et al.
- "Recent Technology Advances of Emerging Memories," by Y. Chen et al.
- "Post-Silicon Validation in the SoC Era: A Tutorial Introduction," by P. Mishra et al.
- "FASTEN: An FPGA-based Secure System for Big Data Processing," by B. Hong et al.

Upcoming 2018 Conferences (Yao-Wen Chang, **conferences@ieee-ceda.com**)	
VLSID	Pune, Maharashtra, India January 6 – 10
ASP-DAC	Jeju, Korea January 22 - 25
WF-IoT	Singapore February 5 - 8

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

***IEEE Embedded Systems Letters* is open for submissions.**
Visit mc.manuscriptcentral.com/les-ieee.
***IEEE Design & Test* is open for submissions.**
Visit mc.manuscriptcentral.com/dandt and ieee-ceda.org/publications/d-t/paper-submission.

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