Conference Reports

Recap of the 37th Edition of the International Conference on Computer-Aided Design (ICCAD 2018)

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■ **JOINTLY SPONSORED BY IEEE** and ACM, the International Conference on Computer-Aided Design (ICCAD) is the premier forum to explore emerging technology challenges in electronic design automation, present leading-edge research and development solutions, and identify future roadmaps for design automation research areas. This year, ICCAD was held in San Diego, CA, on 4–8 November 2018 at the Hilton Resort in Mission Bay. San Diego's dependably perfect weather made for a great backdrop for the 37th installment of the conference. We had over 400 attendees at ICCAD this year for the regular program and workshops combined, thanks in part to the location. We hope to have ICCAD back in San Diego at some point in the near future.

This was another strong year for ICCAD in terms of the number of regular paper submissions. Approximately 400 regular papers were submitted for review by our technical program committee. Submissions in hardware security and neural networks were particularly popular; however, traditional electronic design automation (EDA) topics such as placement, verification/validation, and logic synthesis were also well represented. In the end, 98 papers were selected by our technical program committee in a face-to-face meeting in June. We also had a record number of special session proposals submitted to ICCAD this year. As a result, we added an extra parallel track to our program on Tuesday to help accommodate the large

number of high-quality special sessions and embedded tutorials. Altogether, we had 26 regular sessions, 13 special sessions, and three embedded tutorials offered at ICCAD. Two Best Paper Awards were presented at the opening ceremony. In the "front-end" category, Xiaofan Zhang, Wen-Mei Hwu, Deming Chen, Junsong Wang, Chao Zhu, Yonghua Lin, and Jinjun Xiong were recognized for their paper entitled "DNNBuilder: An Automated Tool for Building High-Performance DNN Hardware Accelerators for FPGAs." The "backend" Best Paper Award went to Alireza Mahzoon, Daniel Große, and Rolf Drechsler for work presented in their paper "PolyCleaner: Clean Your Polynomials Before Backward Rewriting to Verify Million-Gate Multipliers."

We were delighted to have three distinguished keynote speakers at ICCAD this year. On Monday, Prof. Chandra Krintz from the University of California, Santa Barbara (UCSB), Santa Barbara, CA, spoke on "Adventures and Opportunities in Cyber-Physical System." Krintz described how cyber-physical systems are on course to transform our society and disrupt the way humans engineer and interact with the world around them. Krintz also discussed her experiences employing these systems to optimize agricultural processes as part of the UCSB SmartFarm project. Tuesday's lunchtime keynote was given by Andreas Olofsson from the Defense Advanced Research Projects Agency (DARPA) as part of the IEEE Council on Electronic Design Automation Luncheon Distinguished Lecture. Olofsson's talk, "Analyzing the Disruptive Impact of a Silicon Compiler," introduced

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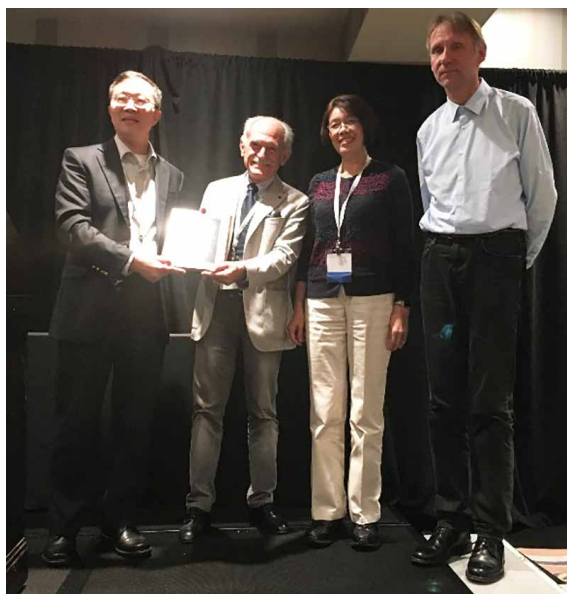
Figure 1. Alberto Sangiovanni-Vincentelli, received the SIGDA Pioneer Award from members of the SIGDA Executive Committee during ICCAD. From left: David Pan (award chair), Alberto Sangiovanni-Vincentelli, X. Sharon Hu (chair), and Joerg Henkel (vice chair).

the audience to DARPA's Electronics Resurgence Initiative and its aspiring goals to build the world's first general-purpose silicon compilers for digital and analog circuits. Finally, on Wednesday we heard from our third keynote speaker, Dr. Rob Aitkens,

ARM fellow and technology lead at ARM Research, who discussed technology trends and their implications on EDA tools and flows. In particular, Aitkens discussed how EDA tools of the future will need to deal with heterogeneous systems that span multiple die and cover abstractions from a device through application software.

It has become a tradition during ICCAD to hold a member meeting for the ACM Special Interest Group on Design Automation (SIGDA) during one of the evenings of the conference. This year during the meeting, Prof. Alberto Sangiovanni-Vincentelli was presented with the SIGDA Pioneer Award, after which he gave an entertaining and thought-provoking retrospective on trending electronic design automation topics over the years.

On Thursday, ICCAD offered seven interesting workshops on a variety of both new and established topics. Some of these workshops were long-time staples of ICCAD, while others were testing the waters for the first time. The workshops drew attendees from the ICCAD regular program who stayed the extra day as well as close to 100 people who came just for the workshops.

The next ICCAD will take place near Denver, CO, on 4–7 November 2019. The executive committee is excited to have ICCAD in Colorado for the first time. See http://www.iccad.com/ for more details. Once again, ICCAD promises to be an ultimate destination for those working on cutting-edge EDA research. We hope to see you in Colorado next year! ∎