ACM/SIGDA Annual Report
Fiscal Year 2006 (July 2005 – June 2006)

Submitted by Diana Marculescu, Chair
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Overview

Fiscal year '06 has continued the previous trend of consolidation for SIGDA. A new Executive Committee elected in June 2005 entered its first year in office, and a few new members joined the SIGDA Advisory Board to support SIGDA's new or existing programs. Following the trend seen during the last two years, most of SIGDA's programs were scaled back, relying partially on external sponsorship for supporting costs associated with some SIGDA programs. As in the previous years, SIGDA marketing activities continued to emphasize three major areas of SIGDA activities: conferences and conference programs, electronic publications, and support for students and new professors.

Conferences and Conference Programs

Sponsoring conferences, symposia, and workshops in electronic design automation (EDA) is a primary activity for SIGDA, and one with a long history. SIGDA sponsors or co-sponsors every major conference in EDA, and most smaller EDA symposia and workshops. In addition, SIGDA organizes the University Booth, the Ph.D. Forum (annually) and Design Automation Summer School (biannually) at DAC, and the CADathlon at ICCAD.

Conferences, Symposia, and Workshops

SIGDA sponsors, co-sponsors, or is "in cooperation with" almost every conference, symposium, and workshop in electronic design automation (EDA), averaging more than 1.5 such events per month. Members of the SIGDA Executive Committee and Advisory Board provide direct representation on the organizing committees of most major conferences; Patrick Madden coordinates the smaller events. During the FY'06 conference year (which runs from March 2005 through February 2006), these events included those listed below (chronologically). Note that some events are listed twice, as they sometimes move around in the February-March timeframe.

- International Workshop on System Level Interconnect Prediction (SLIP'05)
- Design, Automation, and Test in Europe (DATE'05)
- International Symposium on Quality Electronic Design (ISQED'05)
- International Symposium on Physical Design (ISPD'05)
- Great Lakes Symposium on VLSI (GLSVLSI'05)
- International Conference on Application of Concurrency to System Design (ACSD'05)
- International Workshop on Logic and Synthesis (IWLS'05)
- Design Automation Conference (DAC'05)
- Formal Methods and Programming Models for Codesign (MEMOCODE'05)
- Formal Methods for Globally Asynchronous Locally Synchronous Design (FMGALS'05)
- Symposium on Languages, Compilers, and Tools for Embedded Systems (LCTES'05)
- International Symposium on Low Power Electronics and Design (ISLPED'05)
- Symposium on Integrated Circuits and Systems Design (SBCCI'05)
- International Conference on Hardware/Software Codesign and System Synthesis (CODES-ISSS'05)
- International Conference on Computer Aided Design (ICCAD'05)
- International Conference on VLSI Design (VLSI'06)
- Asia and South Pacific Design Automation Conference (ASP-DAC'06)
- International Symposium on Field Programmable Gate Arrays (FPGA'06)
- International Workshop on Timing Issues in the Specification and Synthesis of Digital Systems (TAU'06)

University Booth at DAC

Under the guidance of SIGDA Advisory Board member Sung Kyu Lim, the University Booth at DAC provides an opportunity for faculty and students to demonstrate university electronic design automation tools, design projects, and instructional materials. Held in a prime location on the Exhibit Floor at DAC, the University Booth provided a great place for DAC attendees to meet and interact with university researchers. The University Booth was sponsored by SIGDA, EDAC, and DAC (which in turn is sponsored by SIGDA, IEEE/CAS, and EDAC), and was organized and run by SIGDA volunteers. The Coordinators for the 2006 University Booth were Raymond Hoare and Alex Jones.

Student Design Contest at DAC

Championed by Steve Levitan, the Student Design Contest at DAC promotes excellence in the design of electronic systems by providing a competition between graduate students in design automation. Judging criteria included originality, soundness of engineering, measured performance, and the written submission. Winning entries were highlighted at DAC's Opening Session and at the DAC/SIGDA University Booth. The Student Design Contest was sponsored by DAC (which in turn is sponsored by SIGDA, IEEE/CAS, and EDAC), the International Solid State Circuit Conference (ISSCC), and various silicon design companies, and was organized and run by volunteers.

Ph.D. Forum at DAC

For the ninth year, the Ph.D. Forum was held at DAC, under the supervision of SIGDA Secretary/Treasurer Robert B. Jones. The Ph.D. Forum is a poster session for Ph.D. students to present and discuss their dissertation research with people in the design automation community. It was a wonderful opportunity for Ph.D. students to get feedback on their work, and for industrial participants to preview academic work-in-progress. The Ph.D. Forum was sponsored by SIGDA, and was organized by SIGDA volunteers. The Chair for the 2006 Ph.D. Forum was Frank Liu.

CADathlon at ICCAD

The fourth CADathlon was held at ICCAD in November 2005, under the supervision of SIGDA Vice-Chair Patrick Madden and SIGDA representative at ICCAD, Nikil Dutt. The CADathlon is a challenging, all-day long, programming competition focusing on practical problems taken from the field of Computer Aided Design, and Electronic Design Automation in particular. The contestants are tested on their CAD knowledge, and on their problem solving, programming, and teamwork skills. The CADathlon was sponsored by SIGDA, and was organized by SIGDA volunteers. The Organizer for the 2005 CADathlon was Geert Janssen.

Electronic Publishing

SIGDA has pioneered electronic publishing of electronic design automation (EDA) literature, beginning with the DA Library in 1989, which captured 25 years of EDA literature onto an archival series of CDROMs. In the early 1990s, SIGDA published the first EDA conference proceedings on CDROMs, and during FY'06 has produced CDROM or DVD proceedings for many of the major EDA conferences and symposia. SIGDA also produces an annual DVD Super Compendium of those proceedings, and Multimedia Monographs, variously based on talks at DAC or ICCAD or on specially-produced tutorials. A new initiative, now in its fourth year, is SIGDA's E-Newsletter (containing information on upcoming conferences and funding opportunities). Finally, SIGDA provides strong support for the ACM journal TODAES (Transactions on Design Automation of Electronic Systems).

DVD Conference Compendia

Under the guidance of SIGDA EC Member at Large Bryan Preas, SIGDA has developed or participated in the development of several DVD compendia, some for SIGDA-sponsored conferences and some as benefits for SIGDA members. Slightly over three years ago, SIGDA partnered with IEEE/CAS to jointly produce two DVDs: one DVD capturing 20 years of proceedings of the International Conference on CAD (ICCAD), and another DVD capturing 40 years of proceedings of the Design Automation Conference (DAC). Since that start, the DAC DVD project has continued, with an updated DVD produced and distributed at the 43rd DAC in June 2005. A longer-range project, completed about two years ago, was to produce a DVD Super Compendium of 10 years of proceedings of all our conferences on DVD, with live internal links. SIGDA is particularly excited about these projects, not only due to their value to the community, but also as a great example of inter-society cooperation.

Multi-Media Monograph Series

Under the guidance of Massoud Pedram, SIGDA continued to produce our CDROM/DVD Multi-Media Monograph Series. The most recent DVD containing a review of emerging directions and disciplines in system-level design was distributed to participants at the SIGDA Member Meeting at DAC'06 and will be distributed to SIGDA members in the next few weeks.

ACM Transactions on Design Automation of Electronic Systems (TODAES)

Under the leadership of outgoing Editor-in-Chief Nikil Dutt, the journal ACM Transactions on the Design Automation of Electronic Systems (TODAES) continues to provide comprehensive coverage of innovative research and work in the creation and evaluation of VLSI electronic systems. The journal was distributed in hard-copy, electronic, and CD-ROM formats.

Web Server

Started by Steve Levitan and now run by SIGDA Advisory Board member Mehmet Yildiz, SIGDA's web server (http://www.sigda.org) has long been a primary source of up-to-date and archival information about the activities of both SIGDA and the electronic design automation community as a whole. The server contains links to a significant amount of design automation information including SIGDA sponsored events, design automation news, awards, and programs. The website has been revamped and reorganized in November 2005 to better showcase all SIGDA sponsored programs, publications, awards, and events.

E-Newsletter

After existing for years in hardcopy format, the SIGDA Newsletter went electronic over three years ago. The SIGDA E-Newsletter is now produced twice each month by its Editors, SIGDA Advisory Board members Qing Wu and Igor Markov, and several associate editors (Qinru Qiu, Hai Zhou, Tony Givargis, Marc Riedel, and Michael Orshansky). The E-Newsletter is emailed to SIGDA members twice each month, and is also available online for members of the EDA community. The SIGDA E-Newsletter replaced the previous DA TechNews content with EDA news compiled and reviewed bi-weekly by three of the Associate editors. The E-Newsletter also contain information on upcoming conferences and funding opportunities, making it a great resource for both the electronic design automation professional as well as researchers and academics. New in FY'06, a new column showcasing new or established EDA topics ("What is…?" column) has been started by Editor Igor Markov.

Support for Students and New Professors

SIGDA provides a surprisingly broad array of support for students and new professors, some as SIGDA-only initiatives, and some as joint initiatives with the Design Automation Conference, our flagship conference. Such support can follow a student from the undergraduate program through many aspects of graduate school to a career as a new professor.

Student Support

The Design Automaton Conference (sponsored by SIGDA, IEEE/CAS, and EDAC) fosters interest in the electronic design automation though various scholarships and support programs. The P.O. Pistilli Scholarship for Advancement in Computer Science and Electrical Engineering supports undergraduate students from under-represented groups. The DAC Young Student Support Program matches new graduate students in design automation with mentors from other schools. The DAC Graduate Scholarships provides several graduate students with one-year support, primarily from universities trying to establish a design automation program. SIGDA's participation in these programs was overseen by Diana Marculescu.

Design Automation Summer School

The first Design Automation Summer School (DASS initiated by Soha Hassoun, was held in Cape Cod, MA in May 2001. The current SIGDA liaison for the program is SIGDA Board member SungKyu Lim. The DASS offered graduate students seeking a Ph.D. in design automation the opportunity to participate in a one-week intensive course focusing on ten different design automation research areas. Well-established researchers defined each topic, described recent research advances, and outlined upcoming challenges. Follow-up discussions and technical activities further increased the interaction among the lecturers and students. The second summer school has been

held in the summer of 2005, co-located with the Design Automation Conference and has been organized by Steve Levitan and Kartik Mohanram. The third edition will take place in conjunction with DAC 2007.

Travel Grants

Under the direction of SIGDA EC Member at Large Rich Auletta, SIGDA's travel grant program continued to provide SIGDA members (in particular, students and new faculty) with support to attend SIGDA-sponsored conferences, symposia, and workshops. Travel grants to attend the Design Automation Conference were handled directly by the conferences, while requests to attend other conferences were handled by SIGDA volunteers. The level of funding for SIGDA's travel grants program for FY'06 was kept at the same levels as in 2005.

Awards

SIGDA presented several awards this past year. At ICCAD in November 2005, three awards were presented at the Opening Session: the ACM/IEEE William J. McCalla ICCAD Best Paper Award was given to Zhenhai Zhu and Jacob White (Massachusetts Institute of Technology), the ACM Outstanding Ph.D. Dissertation Award in Electronic Design Automation was given to Shuvendu Lahiri (Carnegie Mellon University), and the SIGDA Outstanding New Faculty Award was given to David Pan (University of Texas, Austin). At DAC in July 2006, two awards were presented at the Opening Session: the ACM TODAES Best Paper Award was given to Tony Givargis (UC Irvine), and the SIGDA Distinguished Service award was given to Robert Walker (Kent State U.). During SIGDA Member meetings at ICCAD 2005 and DAC 2006, the following were awarded the SIGDA Technical Leadership Award for their contributions to SIGDA programs: Florian Krohm (IBM), R. Iris Bahar (Brown U.), Igor Markov (U. of Michigan), Radu Marculescu (Carnegie Mellon U.), Frank Liu (IBM), Kartik Mohanram (Rice U.), and Ray Hoare (U. Pittsburgh).