ACM/SIGDA Annual Report
Fiscal Year 2005 (July 2004 – June 2005)

Submitted by Diana Marculescu, Chair
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Overview

Fiscal year '05 was one of consolidation for SIGDA. The Executive Committee (officers) elected in 2001 entered their fourth year in office, and a few new members joined the SIGDA Advisory Board to replace those who left. Following last year's review of SIGDA's programs due to declining revenues, in particular declining surpluses from the Design Automation Conference (formerly SIGDA's largest income stream), most of SIGDA's programs were scaled back, the travel grant programs in particular.

As in the previous year, SIGDA marketing 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 and the Ph.D. Forum 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'05 conference year (which runs from March 2004 through February 2005), 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 Symposium on Quality Electronic Design (ISQED'04)
- International Symposium on Physical Design (ISPD'04)
- Great Lakes Symposium on VLSI (GLSVLSI'04)
- International Workshop on Logic and Synthesis (IWLS'04)
- Design Automation Conference (DAC'04)
- Formal Methods and Programming Models for Codesign (MEMOCODE'04)
- Symposium on Languages, Compilers, and Tools for Embedded Systems (LCTES'04)
- International Symposium on Low Power Electronics and Design (ISLPED'04)
- Symposium on Integrated Circuits and Systems Design (SBCCI'04)
- International Conference on Hardware/Software Codesign and System Synthesis (CODES-ISSS'04)
- International Conference on Computer Aided Design (ICCAD'04)
- International Conference on VLSI Design (VLSI'05)
- Asia and South Pacific Design Automation Conference (ASP-DAC'05)
- International Symposium on Field Programmable Gate Arrays (FPGA'05)
- International Workshop on Timing Issues in the Specification and Synthesis of Digital Systems (TAU'05)
- Design, Automation, and Test in Europe (DATE'05)

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 Coordinator for the 2005 University Booth was Raymond Hoare.

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 SIGDA and ISSCC volunteers.

Ph.D. Forum at DAC

For the eighth year, the Ph.D. Forum was held at DAC, a program organized by Soha Hassoun. 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 2005 Ph.D. Forum was Radu Marculescu.

CADathlon at ICCAD

The second CADathlon was held at ICCAD in November 2004, a program organized by Soha Hassoun. 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 Co-Organizer for the 2004 CADathlon was Florian Krohm (IBM).

Monthly Conference Planner

Now in its third year, the SIGDA Monthly Conference Planner was developed by John Karro. Based on a similar planner published by the IEEE/CS TTTC, the Monthly Planner is a small (5"x8") 40-page brochure designed to help the design automation community plan their activities with respect to submitting papers to, and attending, design automation conferences. Calendars for each month list the submission deadlines during that month, as well as more detailed information for conferences held that month (location, Chair, web page, etc.). New versions of the planner were handed out at SIGDA's three major conferences (ICCAD, DATE, and DAC), and were mailed to SIGDA members. Of course, the Monthly Planner also happens to include information on SIGDA and SIGDA's programs!

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 now produces CDROM or DVD proceedings for many of the major EDA conferences and symposia each year. 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. Two new initiatives, now in their third year, were SIGDA's E-Newsletter (containing information on upcoming conferences and funding opportunities) and DA TechNews (containing a summary of the latest EDA news). Finally, SIGDA provides strong support for the ACM journal TODAES (Transactions on Design Automation of Electronic Systems).

DVD Conference Compendia

Under the guidance of 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 two 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 42nd DAC in June 2005. A longer-range project, completed this fiscal year, 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, soon to be distributed to SIGDA members, contains a review of emerging directions and disciplines in system-level design.

ACM Transactions on Design Automation of Electronic Systems (TODAES)

Under the leadership of outgoing Editor-in-Chief Mary Jane Irwin and incoming Editor-in-Chief Nikil Dutt, the journal ACM Transactions on the Design Automation of Electronic Systems (TODAES) continued 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 new 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 calendars, design automation websites, newsgroups, and to people with "who's who" pages. The server is currently being reorganized to add new capabilities oriented toward electronic publication of EDA news and events.

E-Newsletter

After existing for years in hardcopy format, the SIGDA Newsletter went electronic over two years ago. The SIGDA E-Newsletter is now produced twice each month by its Editor, SIGDA Diana Marculescu, and several associate editors (Larry Pileggi, R. Iris Bahar, Igor Markov, and Hiroto Yasuura). 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 lists the headlines of the current issue of DA TechNews (see below), and 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. Information on Asian activities is also included, coordinated through Hiroto Yasuura.

DA TechNews

Modeled on ACM's TechNews, the DA TechNews is now in its second year, under the direction of Diana Marculescu and Associate Editor Larry Pileggi. The DA TechNews is emailed to SIGDA members twice each month, and contains a summary of the latest electronic design automation news.

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 Robert Walker.

Design Automation Summer School

The first Design Automation Summer School (DASS), organized by Soha Hassoun, was held in Cape Cod, MA in May 2001. 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.

Travel

Under the direction of 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. Unfortunately, economic pressures have forced a drastic reduction in funds for SIGDA's travel grants program for FY'05.

Awards

SIGDA presented several awards this past year. At ICCAD in November 2004, three awards were presented at the Opening Session: the ACM/IEEE William J. McCalla ICCAD Best Paper Award was given to Xin Li, JiayongLe, Padmini Gopalakrishnan, and Lawrence T. Pileggi (Carnegie Mellon) and to Ronald Freund (UC Davis), the ACM Outstanding Ph.D. Dissertation Award in Electronic Design Automation was given to Chao Wang (University of Colorado), and the SIGDA Outstanding New Faculty Award was given to Kaustav Banerjee (UC Santa Barbara) and to Igor Markov (University of Michigan). At DAC in June 2005, two awards were presented at the Opening Session: the ACM TODES Best Paper Award was given to Jason Cong (UCLA), Hui Huang (Sun Microsystems), and Xin Yuan (IBM), and the SIGDA Distinguished Service award was given to Mary Jane Irwin (Penn State).