

ACM/SIGDA Annual Report

Fiscal Year 2007 (July 2006 – June 2007)

Submitted by Diana Marculescu, Chair

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Overview

Fiscal year 2007 has been characterized by several major changes necessary for achieving a sound financial situation within SIGDA. Following the trend seen during last year, all of SIGDA's programs were scaled back or reshuffled, relying partially on external sponsorship for supporting costs. 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) while also starting several new initiatives.

New Initiatives

Technical Committees

Under the guidance of SIGDA Member at Large Massoud Pedram, SIGDA has established several Technical Committees (TCs) in specific areas of EDA. SIGDA TCs have been started with the purpose of supporting various EDA technical areas through SIGDA policies/strategy planning. The main goal is to generate more interest/impetus in a particular technical area, while also providing a communication channel between SIGDA and various technical areas in EDA. Current SIGDA TC Areas are: (1) Physical design; (2) Logic/RTL synthesis; (3) System level design; (4) Low power design; (5) Testing; (6) FPGA, configurable computing; (7) Verification; (8) Emerging technologies. The TC members meet twice a year at DAC and ICCAD during a working lunch where they showcase their activities over the last year and share ideas from their projects.

Duplicate text DEtection (DUDE) project

Started by SIGDA Board Member Igor Markov, the DUPLICATE text DETECTION (DUDE) project applies computer technology used by Web search engines to detect matching text in sets of technical papers. DUDE can help reviewers to identify papers most relevant to the paper under review. DUDE can also help program committees of research conferences to check for the following: (1) A submitted paper should not overlap too much with previously published work; (2) A submitted paper should not overlap too much with other papers still under consideration by conferences (including accidental duplicate submissions to the same conference and deliberately similar submissions to multiple conferences); (3) A final submission should fairly closely match the original submission used for review. DUDE can also help enforcing the 30%-policy for ACM journal publications, which requires at least 30% new material compared to earlier conference publications. DUDE does not make moral judgments about how much matching text is "too much overlap" or "fairly closely match", but rather sorts matching papers to highlight most similar pairs. It generates reports for conference committees, pointing out and annotating any similarities that exist. Conference committees, in accord with their conference policies, make all decisions. DUDE was started in collaboration with IEEE's Council on EDA.

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 (annually).

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'07 conference year (which runs from

March 2006 through February 2007), these events included those listed below (chronologically). Note that some events may be listed twice, as they sometimes move around in the February-March timeframe.

- International Workshop on System Level Interconnect Prediction (SLIP'06)
- Design, Automation, and Test in Europe (DATE'06)
- International Symposium on Quality Electronic Design (ISQED'06)
- International Symposium on Physical Design (ISPD'06)
- Great Lakes Symposium on VLSI (GLSVLSI'06)
- International Workshop on Logic and Synthesis (IWLS'06)
- Design Automation Conference (DAC'06)
- Formal Methods and Programming Models for Codesign (MEMOCODE'06)
- Symposium on Languages, Compilers, and Tools for Embedded Systems (LCTES'06)
- International Symposium on Low Power Electronics and Design (ISLPED'06)
- Symposium on Integrated Circuits and Systems Design (SBCCI'06)
- Embedded Systems Week (ESWEEK'06)
- IFIP International Conference on Very Large Scale Integration (VLSI-SoC'06)
- Formal Methods in Computer-Aided Design (FMCAD'06)
- International Conference on Computer Aided Design (ICCAD'06)
- International Conference on VLSI Design (VLSI'07)
- Asia and South Pacific Design Automation Conference (ASP-DAC'07)
- International Symposium on Field Programmable Gate Arrays (FPGA'07)
- International Workshop on Timing Issues in the Specification and Synthesis of Digital Systems (TAU'07)

University Booth at DAC

Under the guidance of newly appointed SIGDA Advisory Board member Alex Jones, 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'07, the 20th University Booth provided a great place for DAC attendees to meet and interact with university researchers. The University Booth was sponsored by SIGDA, DAC, and corporate supporters, and was organized and run by SIGDA volunteers. The Coordinators for the 2007 University Booth were Alex Jones and Jun Yang.

Student Design Contest at DAC

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 this year's DAC's Opening Session and at the DAC/SIGDA University Booth. The Student Design Contest was sponsored by DAC, SIGDA, IEEE/CAS, EDAC, and various silicon design companies, and was organized and run by volunteers.

Ph.D. Forum at DAC

The 10th 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 several industrial supporters, and was organized by SIGDA volunteers. The Chair for the 2007 Ph.D. Forum was Tony Givargis.

CADathlon at ICCAD

The 5th CADathlon was held at ICCAD in November 2006, under the supervision of SIGDA Board Member Igor Markov. 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 2006 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. SIGDA has produced an annual DVD Super Compendium of those proceedings, and Multimedia Monographs, variously based on talks at DAC or ICCAD or on specially-produced tutorials. Now in its fifth year, SIGDA's E-Newsletter contains information on upcoming conferences and funding opportunities, as well as the latest news in EDA and the "What is...?" column. 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 four 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 44th DAC in July 2006. A longer-range project, completed about three years ago, was to produce a DVD Super Compendium of 10+ years of proceedings of all our conferences on DVD, with live internal links. While SIGDA has pioneered electronic publication in this form more than 20 years ago, in the era of digital libraries the utility of these forms of electronic publication have started to become limited as the same information is available in the ACM Digital Library. Thus, this will be the final year during which the Super Compendium is produced.

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 was distributed to SIGDA in the weeks following DAC.

ACM Transactions on Design Automation of Electronic Systems (TODAES)

Under the leadership of 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 is distributed in hard-copy, electronic, and CD-ROM formats.

Web Server

Now maintained by Yuan Lin, 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 four 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 contains information on upcoming conferences and funding opportunities, making it a great resource for both electronic design automation professionals, as well as researchers and academics. Last year, 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 through 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

Currently overseen by SIGDA Board member SungKyu Lim, the DASS offers 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 third summer school has been held June 2-3, 2007, co-located with the Design Automation Conference, and organized by Kartik Mohanram and Vikas Chandra. The fourth edition will take place in conjunction with DAC 2009.

Travel Grants

Under the direction of former SIGDA EC Member at Large Rich Auletta (and currently under the supervision of SIGDA Treasurer/Secretary Robert Jones), 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'07 was kept at the same levels as in 2006.

Awards

SIGDA presented several awards this past year. At ICCAD in November 2006, three awards were presented at the Opening Session: the ACM/IEEE William J. McCalla ICCAD Best Paper Award was given to Murari Mani, Ashish K. Singh, Michael Orshansky (University of Texas, Austin), the ACM Outstanding Ph.D. Dissertation Award in Electronic Design Automation was given to Haifeng Qian (University of Minnesota), and the SIGDA Outstanding New Faculty Award was given to Michael Orshansky (University of Texas, Austin). At DAC'07 in June 2007, several awards were presented at the Opening Session. The ACM TODAES Best Paper Award was given to Anup Gangwar (Freescale Semiconductor), M. Balakrishnan (Indian Institute of Technology, Delhi), and Anshul Kumar (Indian Institute of Technology, Delhi). The SIGDA Distinguished Service award was given to Dan Gajski (U. of California, Irvine), Don Thomas (Carnegie Mellon U.), Chuck Shaw (Cadence), and Janie Irwin (Penn State U.) for contributions to the SIGDA/DAC University Booth on the occasion of its 20th edition; Soha Hassoun (Tufts U.) and Steve Levitan (U. of Pittsburgh) for contributions to the SIGDA Ph.D. Forum at DAC on the occasion of its 10th edition; and Rich Auletta (Cadence) for over a decade of service to SIGDA and EDA profession. During SIGDA Member meeting at DAC 2007, Tony Givargis (U. of California, Irvine) was awarded the SIGDA Technical Leadership Award for his contributions to SIGDA Ph.D. Forum at DAC.