

SIGARCH Annual Report

July 2008 - June 2009

Overview

The primary mission of SIGARCH continues to be the forum where researchers and practitioners of computer architecture can exchange ideas. SIGARCH sponsors or cosponsors the premier conferences in the field as well as a number of workshops. It publishes a quarterly newsletter and the proceedings of several conferences. It is financially strong with a fund balance of over two million dollars. The SIGARCH bylaws are available online at http://www.acm.org/sigs/bylaws/arch_bylaws.html.

Officers and Directors

During the past fiscal year Doug Burger served as SIGARCH Chair, David Wood served as Vice Chair, and Kevin Skadron served as Secretary/Treasurer. Margaret Martonosi, Krste Asanovic, Bill Dally, and Sarita Adve served on the board of directors, and Norm Jouppi also served as Past Chair. In addition to these elected positions, Doug DeGroot continues to serve as the Editor of the SIGARCH newsletter Computer Architecture News, and Nathan Binkert was appointed as the new SIGARCH Information Director, providing SIGARCH information online. Rob Schreiber serves as SIGARCH's liaison on the SC conference steering committee.

The Eckert-Mauchly Award, cosponsored by the IEEE Computer Society, is the most prestigious award in computer architecture. SIGARCH endows its half of the award, which is presented annually at the Awards Banquet of ISCA. Joel Emer of Intel received the award in 2009, "For pioneering contributions to performance analysis and modeling methodologies; for design innovations in several significant industry microprocessors; and for deftly bridging research and development, academia and industry." Last year, SIGARCH petitioned ACM to increase the ACM share of the award to \$10,000, using an endowment taken from the SIGARCH fund balance, which ACM has approved. The increase will happen when IEEE approves a matching increase, which will increase the amount of the award to \$20,000.

SIGARCH has endowed the Maurice Wilkes Award, an award established to recognize computer architects early in their careers, named after one of the pioneers of computer architecture who began making significant contributions early in his career. The award is selected by a vote of the Executive Committee and Board of SIGARCH, from a list of nominees supplied by a three person nominating committee. The 2009 award went to Shubu Mukherjee of Intel, "for outstanding contributions to modeling and design of soft-error tolerant microarchitectures."

SIGARCH also cosponsors, along with the IEEE-CS TCCA, the Influential ISCA Paper Award which is presented annually at the ISCA conference. This award recognizes the paper, presented at the ISCA conference 15 years previously, which has had the most impact on computer architecture. The fifth Influential ISCA Paper Award was presented to Jeffrey Kuskin, David Ofelt, Mark Heinrich, John Heinlein, Richard Simoni, Kourosh Gharachorloo, John Chapin, David Nakahira, Joel Baxter, Mark Horowitz, Anoop Gupta, Mendel Rosenblum, and John Hennessy for their paper "The Stanford FLASH Multiprocessor" which appeared in the proceedings of the 21st ISCA (1994).

In 2007 the ACM Awards Committee approved the establishment of the SIGARCH Distinguished Service Award, for "important service to the Computer Architecture community." The second recipient was Mark Hill of Wisconsin, who spent many years serving on the SIGARCH board/executive positions, and served as program chair for ISCA 2005. Nominations each year are due February 15th, and can be sent to the SIGARCH Secretary/Treasurer at any time.

All four awards, the Eckert-Mauchly Award, the Maurice Wilkes Award, the Influential ISCA Paper Award, and the Distinguished Service Award were presented at ISCA 2009 in Austin, TX. SIGARCH is also a partial sponsor of the new Ken Kennedy Award.

Conferences

SIGARCH is a 50% cosponsor of ISCA, the International Symposium on Computer Architecture, which is the premier conference in the field of computer architecture. The 36th annual ISCA (ISCA 2009) was held in Austin, TX. Stephen Keckler was the General Co-Chair and Luiz Barroso was Program Chair. ISCA 2010 will be held in Saint Malo, France, with Andre Seznec as General Chair, along with Uri Weiser and Ronny Ronen as Co-Program Chairs. ISCA 2011 will be held in San Jose as a part of FCRC, with Ravi Iyer and Qing Yang as Co-General Chairs. The location of ISCA 2012 has not yet been set.

The SC'XY Conference is jointly sponsored by SIGARCH and the IEEE Computer Society. Formerly known as the Supercomputing Conference, the conference has successfully evolved away from its focus on supercomputers and is now the High Performance Networking and Computing Conference. In addition to its technical success, SC'XY is large enough that it must be scheduled many years in advance. SC 2008 was a large success in Austin. SC 2009 will be held in Portland, OR.

SIGARCH is a cosponsor of the Conference on Architectural Support for Programming Languages and Operating Systems, commonly known as ASPLOS, along with SIGPLAN and SIGOPS. The conference had been held biannually since 1982, alternating its location between San Jose and Boston. Starting in 2008 the conference has been held annually. ASPLOS 2009 was held in Washington D.C., with Mary Lou Soffa serving as General Chair and Mary Jane Irwin serving as Program Chair. ASPLOS steering committee representatives of SIGPLAN and SIGOPS pointed out that their premier conferences are historically held within a week of ASPLOS's recent date in the fall. This conflict created a danger of ASPLOS degenerating into merely another architecture conference. This problem and a decision by the ASPLOS steering committee to move the 2008 conference to a date between but not including President's Day week and the first week with a significant number of spring breaks (the second week of March) was discussed at ASPLOS 2006. This time window allows papers rejected from OOPSLA or SOSOP to be revised and resubmitted to ASPLOS, and papers rejected from ASPLOS to be revised and resubmitted to ISCA. Unfortunately, since there are over a dozen architecture conferences a year, moving any conference creates conflicts. The steering committee has done their best to minimize conflicts given the constraints above, and picked the dates furthest from HPCA within the window described above. ASPLOS 2010 will be held in Pittsburgh, PA, with Vikram Adve of Illinois serving as General Chair and James Hoe and Todd Mowry of CMU serving as co-Program Chairs. ASPLOS 2011 will be held in southern California with Rajiv Gupta serving as General Chair.

SIGARCH sponsors the International Conference on Supercomputing (ICS). ICS 2009 took place at the IBM's TJ Watson Research Center in Yorktown Heights, NY. Michael Gschwind and Alex Nicolau were the General Co-Chairs, and Valentina Salapura and Jose Moreira were the Program Co-Chairs.

The nineteenth Symposium on Parallel Algorithms and Architectures (SPAA 2009), jointly sponsored by SIGARCH and SIGACT, was held in Calgary, Canada in August. Friedhelm Meyer auf der Heide of the University of Paderborn was General Chair and Michael Bender of SUNY Stony Brook was Program Chair.

SIGARCH is one-half cosponsor of the IEEE/ACM International Conference on Grid Computing. Grid '09 will be held in Banff, Colorado. Dieter Kranzmueller of LRU and LRZ, Germany, and Jill Kowalchuk of Cybera, Canada, will be the General Co-Chairs, and Paul Lu of the University of Alberta will be the Program Chair.

SIGARCH is one-half cosponsor of the International Symposium on High Performance Distributed Computing. HPDC '09 was held in Munich, in June. Dieter Kranzmueller of LRU and LRZ, Germany was the General Chair, with Arndt Bode of TUM and Heinz-Gerd Hegering of LRZ as the General Co-Chairs. Michael Gerndt of the Technische Universität München and Henri Casanova of the University of Hawaii are the Program Co-Chairs.

SIGARCH is one-third cosponsor of the Conference on Parallel Architectures and Compiler Techniques (PACT), along with the IEEE Computer Society and IFIP, and annually held in the fall. PACT 2009 will take place in Raleigh, North Carolina in September. Sally McKee of Chalmers University and Martin Schulz of Lawrence Livermore National Laboratory will be General Co-Chairs. Bronis R. de Supinski and Frank Mueller of North Carolina State University will be the Program Co-Chairs.

SIGARCH is one-fourth co-sponsor of the Symposium on Architectures for Networking and Communications Systems (ANCS). The fifth ANCS, ANCS 2009, will be held in Princeton, NJ in October. Peter Onufryk of IDT and K.K. Ramakrishnan of AT&T Labs are the General Co-Chairs, and Patrick Crowley of Washington University and John Wroclawski of USC are the Program Co-Chairs.

In 2007 SIGARCH was a founding co-sponsor of the International Symposium on Networks-on-Chips (NOCS). NoCS 2009 was held in May in , with Bill Yin of UCSD and Partha Kundu of Intel as General Co-Chairs, and Radu Marculescu of CMU and Axel Jantsch of KTH as Program Co-Chairs. SIGARCH also became a cosponsor of the International Conference on Autonomic Computing (ICAC) in 2007. ICAC 2009 was held in Barcelona, Spain in June. Simon Dobson of UCD Dublin and John Strassner of Waterford Institute of Technology were the General Co-Chairs, and Manish Parashar of Rutgers and Onn Shehory from IBM Research Haifa were Program Co-Chairs.

In addition to the above conferences, SIGARCH has taken a small sponsorship position, or in-cooperation status, with several other conferences. SIGARCH has ceased to be been a minor sponsor of the International Conference on High Performance Computing (HiPC), held annually in December and alternating between Bangalore and Hyderabad, India, but is now in cooperation with HiPC. SIGARCH also has a small sponsorship position in SenSys, a conference on Sensor Systems. In addition, SIGARCH has in-cooperation status with TridentCom, DOCSS, Euro-Par, GridNets, and Nano-Net.

Travel Grants

In the past, SIGARCH supported travel grants to students who attended ISCA or ASPLOS. SIGARCH has now broadened travel grants to other SIGARCH-sponsored conferences, although the exact policy of how much to allocate to each conference has not yet been finalized. The grants are restricted to student members of SIGARCH, following several votes of the SIGARCH membership. The precise amount of the grants depends on the number of students who apply, but we have made an attempt to give at least a modest grant to every student coauthor that applied. For ISCA 2009, SIGARCH combined NSF funding of \$15K with matching funding from IEEE TCCA (\$10K), and used these funds to support a pool of 110 applications for student travel grants.

In 2007 SIGARCH sponsored a companion travel grant program for ISCA, which includes child-care costs for SIGARCH-sponsored conferences. This program provides funds for travel grants to attend ISCA 2007 for a companion care-provider for a SIGARCH member who are either (1) a person with a physical disability necessitating a companion, or (2) a parent of an infant less than one year old who cannot travel without the infant and a care-provider for the infant. This program is similar to SIGPLAN's child care/companion travel grant program. This program was presented to other SIGs at a SIG Governing Board (SGB) meeting, and may be adopted by other SIGs in the future as a best practice. In 2009, SIGARCH had four applications for such travel grants.

SC Conference Grants

In 2009, the SC leadership requested \$448,051 in funds for special projects related to the SC community, and for FY'10, \$308,489 has been budgeted.

Publications

CAN (Computer Architecture News), SIGARCH's newsletter, is published 4 times a year. In addition, the ISCA Proceedings form a special fifth issue, and the ASPLOS Proceedings is likewise distributed as a

special sixth issue. The newsletter consists of technical contributions, reports of panels, Internet nuggets (the most interesting or controversial articles from the comp.arch newsgroup), book reviews, and calls for papers. There are occasional single topic special issues. Proceedings of SC, SPAA and ICS are available through the Member Plus program. This year SIGARCH is offering a new electronic membership for regular members and students, at reduced cost with no proceedings mailed.

Finances

SIGARCH enjoys a healthy fund balance that is currently larger than the roughly one million dollar fund balance required by the ACM for sponsorship of SIGARCH conferences. SIGARCH actually loses money on each member, but makes money on average from conferences. The SC conference often has a large surplus due to its exhibition component. SIGARCH and the SC Steering Committee have an agreement that some of the future profits from SC'XY will be in large part returned to the SC community, in the form of a series of large project-oriented grants (to be matched by the other sponsor of SC'XY, the IEEE Computer Society). The grant amounts are capped by the average surplus over the first two of the previous three years. In 2008 the grants provided \$448,051.

Bylaws

In 2008 the SIGARCH Chair submitted proposed changes to the SIGARCH Bylaws, making leadership positions gender-neutral, and including the role and title of the SIGARCH Information Directory. The Bylaw changes were approved in 2009.

Membership

SIGARCH membership has been declining gradually since 1999, dropping from 1452 in 2005 to 1315 in 2008. However SIGARCH's membership retention rate was the highest among all of ACM's SIGs in 2007, at 80%, with the number of SIG-only members gradually increasing, even as student and professional members gradually drop, and as ISCA, SIGARCH's flagship conference, continues to grow.

Innovative Programs

SIGARCH was a partial supporter of an NSF-sponsored workshop on Computer Architecture and Parallel Computing held at Brown University in August, 2008. This workshop, aimed primarily at women and under-represented minority undergraduates, is intended to interest young students in the field of computer architecture and to encourage their pursuit of graduate school and a research career. 40 students the program, and SIGARCH funding (along with NSF and industry support) supported their travel and workshop expenses.

Summary

SIGARCH remains a financially healthy institution with an enthusiastic membership. The interest of its members can be gauged by the health of all of its major conferences in the past year. The challenges remain as they have in previous years: how to better serve our members, how to encourage other members of the architecture community to join, how to help steer the community as the nature of our field changes, and how to use our fund balance most effectively.

Respectfully submitted,

Doug Burger
SIGARCH Chair