

SIGARCH Annual Report

July 2007 - June 2008

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 Doug Burger served as temporary Information Director, providing SIGARCH information online. Rob Schreiber serves as SIGARCH's liaison on the SC conference steering committee. At the end of the year, Nathan Binkert was appointed as the new Information Director, effective July 2008.

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. David Patterson of UC-Berkeley received the award in 2008, "For seminal contributions to RISC microprocessor architectures, RAID storage systems design, and reliable computing, and for leadership in education and in disseminating academic research results into successful industrial products." This year, SIGARCH petitioned ACM to increase the ACM share of the award to \$10,000, using an endowment taken from the SIGARCH fund balance. We are waiting on IEEE to approve 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 2008 award went to Sarita Adve of the University of Illinois, "for formalization of memory consistency models, especially data-race free models, and their influence on both hardware and high-level languages."

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 Maruice Herlihy and J. Eliot B. Moss for their paper "Transactional Memory: Architectural Support for Lock-Free Data Structures" which appeared in the proceedings of the 20th ISCA (1993).

In 2007 the ACM Awards Committee approved the establishment of the SIGARCH Distinguished Service Award, for "important service to the Computer Architecture community." The first recipient was Alan Berenbaum, who spent 14 years serving on the SIGARCH board/executive positions. Nominations each year are due February 15th, and can be sent to the SIGARCH Secretary/Treasurer at any time. Many other SIGs have similar awards.

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 2008 in Beijing, China.

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 35rd annual ISCA (ISCA 2008) was held in Beijing. Kai Li and Jesse Fang were General Co-Chairs and Wen-mei Hwu was Program Chair. ISCA 2009 will be held in Austin, with Steve Keckler as General Chair and Luiz Barroso will be Program Chair. ISCA 2010 will be held in Paris, with André Seznec as General Chair. ISCA 2011 will be held with FCRC in either San Jose or Portland.

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 will be held in Austin.

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 will be held annually, due to recent increased interdisciplinary work in hardware/software tradeoffs for multicores, virtualization support, etc. ASPLOS 2008 was held in Seattle, with Susan Eggers serving as General Chair and Jim Larus serving as Program Chair, and will be collocated with Virtual Execution Environments (VEE) 2008. 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 2009 will be held in Washington, DC, with Mary Lou Soffa of Virginia serving as General Chair and Mary Jane Irwin of Penn State serving as Program Chair.

SIGARCH sponsors the International Conference on Supercomputing (ICS). ICS 2008 took place on the Island of Kos, Greece, in June. Theo Papatheodorou of the University of Patras and Utpal Banerjee were the General Co-Chairs, and Avi Mendelson of Intel and Kyle Gallivan of Florida State were the Program Co-Chairs.

The nineteenth Symposium on Parallel Algorithms and Architectures (SPAA 2008), jointly sponsored by SIGARCH and SIGACT, was held in Munich, Germany as part of FCRC in June. Friedhelm Meyer auf der Heide of the University of Paderborn was General Chair and Nir Shavit of Tel-Aviv University and Sun Microsystems Laboratories was Program Chair.

SIGARCH is one-half cosponsor of the IEEE/ACM International Conference on Grid Computing. Grid '08 will be held in Tsukuba, Japan. Satoshi Sekiguchi of AIST, Japan is the General Chair and Kento Aida of NII, Japan, and Henri Casanova of the University of Hawaii are the Program Co-Chairs.

SIGARCH is one-half cosponsor of the International Symposium on High Performance Distributed Computing. HPDC '08 was held in Boston, Massachusetts, in June. Manish Parashar of Rutgers and Karsten Schwan of Georgia Tech were the General Co-Chairs. Domenico Laforenzo of the Information Science and Technology Institute (CNR, Italy) and Jon Weissman of the National e-Science Center (Edinburgh)/U. Minnesota were 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 2008 will take

place in Toronto, Canada in October. Andreas Moshovos of U. Toronto is the General Chair and David Tarditi of Microsoft Research and Kunle Olukotun of Stanford are Program Co-Chairs.

SIGARCH is one-fourth co-sponsor of the Symposium on Architectures for Networking and Communications Systems (ANCS). The fourth ANCS, ANCS 2008, will be held in San Jose in November. Mark Franklin is General Chair and D. K. Panda of Ohio State University and Dimitri Stiliadis of Bell are Program Co-Chairs. ACM SIGCOMM and the IEEE are also co-sponsoring this conference.

In 2007 SIGARCH was a founding co-sponsor of the International Symposium on Networks-on-Chips (NOCS). NoCS 2008 was held in April at Newcastle University, UK, with Alex Yakovlev and John Bainbridge as General Co-Chairs, and Kees Goossens and Davide Bertozzi as Program Co-Chairs. SIGARCH also became a cosponsor of the International Conference on Autonomic Computing (ICAC) in 2007. ICAC 2008 was held in Chicago, IL, in June. Jose Fortes and Kumar Goswami were the General Co-Chairs, and John Strassner and Simon Dobson 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. For the last several years SIGARCH has been a minor sponsor of the International Conference on High Performance Computing (HiPC), held annually in December and alternating between Bangalore and Hyderabad, India. SIGARCH also has a small sponsorship position in SenSys, a conference on Sensor Systems. In addition, SIGARCH has in-cooperation status with Euro-Par, Cool Chips, GridNets, Nanonet, Infoscale, and the International Conference on Grid Computing (ICG).

Travel Grants

SIGARCH gives travel grants to students who attend ISCA or ASPLOS. 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 2008, SIGARCH was able to fund all students that applied and were able to attend the conference (numbering 52), with grants of \$875 apiece.

In 2007 SIGARCH sponsored a companion travel grant program for ISCA. 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. To our knowledge this program is unique among SIGs. 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 2008, SIGARCH had no applications for such travel grants. Consequently, we will be working to improve the advertisement of this program.

SC Conference Grants

In 2008, the SC leadership has requested \$911,000 in funds for special projects related to the SC community.

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.

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 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 previous two years. In 2007 the grants provided TODO.

Bylaws

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 will be approved (or not) in 2008.

Membership

SIGARCH membership has been declining gradually since 1999, dropping from 1452 in 2005 to 1334 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 is a partial supporter of an NSF-sponsored workshop on Computer Architecture and Parallel Computing to be 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 have been admitted to the program, and SIGARCH funding (along with NSF and industry support) will pay their travel and workshop expenses. We will report on the outcomes of the workshop in next year's report.

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