SIGARCH Annual Report
July 2009 - June 2010

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. Bill Dally of NVidia and Stanford University received the award in 2010, "For outstanding contributions to the architecture of interconnection networks and parallel computers." 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 2010 award went to Andreas Moshovos of the University of Toronto, "for foundational contributions to the area of memory dependence prediction."

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 sixth Influential ISCA Paper Award was presented to Dean Tullsen, Susan Eggers, and Hank Levy for their paper "Simultaneous Multithreading: Maximizing On-Chip Parallelism" which appeared in the proceedings of the 22nd ISCA (1995).

In 2009, SIGARCH and the ASPLOS co-sponsors (SIGPLAN and SIGOPS) approved the creation of an ASPLOS Best Paper Award, the first one of which was awarded in 2009. The Award is determined by a vote of the Program Committee, and announced at the conference. Starting in 2011. ASPLOS will also award an "Influential Paper Award," modeled after the award presented at ISCA.

In 2007 the ACM Awards Committee approved the establishment of the SIGARCH Distinguished Service Award, for "important service to the Computer Architecture community." The fourth recipient was Mary Jane Irwin of the Pennsylvania State University, who spent many years serving on the SIGARCH board/executive positions, and has represented SIGARCH's research community on national committees as well.

Nominations each year are due February 15th, and can be sent to the SIGARCH Secretary/Treasurer at any time.

SIGARCH is a co-sponsor of the new Ken Kennedy Award. The ACM-IEEE CS Ken Kennedy Award is awarded annually and recognizes substantial contributions to programmability and productivity in computing and substantial community service or mentoring contributions. The award includes a $5,000 honorarium and the award recipient will be announced at the SC Conference. The recipient will give a presentation, normally technical, at the SC conference at which it is announced, or at an ACM or IEEE conference of the winner's choosing during the year following the announcement. The 2009 recipient of the Ken Kennedy Award was Francine Berman.

Four of the above awards, the Eckert-Mauchly Award, the Maurice Wilkes Award, the Influential ISCA Paper Award, and the SIGARCH Distinguished Service Award were presented at ISCA 2010 in St. Malo, France.

SIGARCH was fortunate to have its nominees selected for the ACM Athena Lecturer award in both 2009 and 2010. In 2009, Susan Eggers was nominated by SIGARCH, and received the award, giving her award lecture at PLDI 2010. In 2010, Mary Jane Irwin was nominated by SIGARCH, and received the award, giving her award lecture at ISCA 2010. This award is quite competitive and is a testament to the strength of the SIGARCH community that two of its members received the award in back-to-back years.

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 37th annual ISCA (ISCA 2010) was held in St. Malo, France. Andre Seznec was the General Chair and Uri Weiser and Ronny Ronen were Program Co-Chairs. ISCA 2011 will be held in San Jose, CA as a part of FCRC, with Qing Yang and Ravi Iyer as General Co-Chairs, and Antonio Gonzalez as Program Chair. The location of ISCA 2012 has not yet been finalized, but a site bid exists for Portland, OR.

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 2009 was in Portland, OR. SC 2010 will be held in New Orleans, LA.

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 2010 was held in Pittsburgh, PA, with Vikram Adve of Illinois serving as Program Chair and James Hoe of CMU serving as General Chairs. ASPLOS 2011 will be held in southern California with Rajiv Gupta serving as General Chair and Todd Mowry serving as Program Chair. ASPLOS 2012 will be held in London, UK with Tim Harris serving as General Chair and Michael Scott serving as Program Chair.

SIGARCH sponsors the International Conference on Supercomputing (ICS). ICS 2010 took place in Tsukuba, Japan. Taisuke Boku was the General Chair, and Hiroshi Nakashima and Avi Mendelson were the Program Co-Chairs. ICS 2011 will be held in Tuscon, AZ, with David Lowenthal as General Chair and Sally McKee and Bronis R. de Supinski as Program Co-Chairs.

The nineteenth Symposium on Parallel Algorithms and Architectures (SPAA 2010), jointly sponsored by SIGARCH and SIGACT, was held in Santorini, Greece in June. Friedham Meyer auf der Heide was General Chair and Cynthia Phillips was Program Chair. SPAA 2011 will be held in San Jose, CA as a part of FCRC.

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

Grid'10 will be held in Brussels, Belgium, with Neil P Chue Hong as General Chair and Laurent Lefevre as Program Chair.

SIGARCH is one-half cosponsor of the International Symposium on High Performance Distributed Computing. HPDC'10 was held in Chicago, IL in June. Kate Keahey and Salim Hariri were the General Co-Chairs, and Peter Dinda was the Program Chair. HPDC'11 will be held in San Jose, CA as part of FCRC, with Arthur Maccabe as General Chair and Douglas Thain as Program Chair.

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 took place in Raleigh, North Carolina in September. Sally McKee of Chalmers University and Martin Schulz of Lawrence Livermore National Laboratory were the General Co-Chairs. Bronis R. de Supinski and Frank Mueller of North Carolina State University were the Program Co-Chairs. PACT 2010 will be held in Vienna, Austria, in September 2010 with Valentina Salapura as General Chair and Michael Gschwind and Jens Knoop as Program Co-Chairs.

SIGARCH is one-fourth co-sponsor of the Symposium on Architectures for Networking and Communications Systems (ANCS). The fifth ANCS was held in Princeton, NJ in October of 2009. Peter Onufryk of IDT and K.K. Ramakrishnan of AT&T Labs were the General Co-Chairs, and Patrick Crowley of Washington University and John Wroclawski of USC were the Program Co-Chairs. ANCS 2010 will be held in La Jolla, CA, with Bill Lin as General Chair and Ravi Iyer and Jeffrey Mogul as Program Co-Chairs.

In 2007 SIGARCH was a founding co-sponsor of the International Symposium on Networks-on-Chips (NOCS). NoCS 2010 was held in May in Grenoble, France, with Luca Benini and Luca Carloni as Program Co-Chairs and Fabien Clermidy and Marcello Coppola as General Co-Chairs. NOCS 2011 will be held in Pittsburgh, PA in May, with Radu Marculescu and Mike Kishinevsky as General Co-Chairs, and Ran Ginosar and Karam Chatha as Program Co-Chairs.

SIGARCH also became a cosponsor of the International Conference on Autonomic Computing (ICAC) in 2007. ICAC 2010 was held in Washington, DC in June. Manish Parashar of Rutgers was the General Chair and Renato Figueiredo and Emre Kiciman were the Program Co-Chairs. ICAC 2011 will be held in Karlsruhe, Germany, with Hartmut Schmeck and Wolfgang Rosenstiel as General Co-Chairs, and Tarek Abdelzaher and Joe Hellerstein as 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 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. 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 2010, SIGARCH matched NSF funding of $20K with matching funding from IEEE TCCA ($4.8K), and used these funds to support 79 applications for student travel grants. SIGARCH has now broadened travel grants to other SIGARCH-sponsored conferences, and has finalized the allocation to each conference, based on revenue increases to SIGARCH and the percentage sponsorship of the conference. The grants are restricted to student members of SIGARCH, following several votes of the SIGARCH membership. The allocation to each conference is set by dividing the travel grant budget by number of attendees, giving an extra 33% allocation to international conferences, and a small additional budget (~10%) to ISCA as the flagship conference.

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. At final budgeting, $278,509 was spent on SC'09 special projects. For FY'10, $273,528 has been budgeted for SC special projects.

Publications

CAN (Computer Architecture News), SIGARCH's newsletter, is published 5 times a year. Of those five, the ISCA Proceedings form a special issue, and the ASPLOS Proceedings is likewise distributed as a special issue. The regular issues of the newsletter consist 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 based principally on workshops. Proceedings of SC, SPAA and ICS are available through the Member Plus program. In 2009, SIGARCH began offering a new electronic membership for regular members and students, at reduced cost with no proceedings mailed. Currently, 270 of SIGARCH's members have registered under the electronic membership option.

Finances

SIGARCH enjoys a healthy fund balance that is currently larger than the $2.2M fund balance required by the ACM for sponsorship of SIGARCH conferences for FY'11. The projected SIGARCH fund balance for FY'10 is $3,187,060. SIGARCH 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 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.

Bylaws

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

Membership

SIGARCH membership was declining gradually since 1999, dropping from 1452 in 2005 to 1344 in 2009, but has started to recover, increasing by 45 to 1389 in 2010. SIGARCH's membership retention rate was the highest among all of ACM's SIGs in 2007, at 80%, with all three of the membership categories (SIG-only members, student, and professional members) all gradually increasing last year. The new electronic-only membership, available at reduced cost, will likely help to grow membership. Last year, 270 of SIGARCH's members became electronic-only members. ISCA, SIGARCH's flagship conference, continues to be healthy and show attendance near the top of historical levels.

Innovative Programs

SIGARCH supports child care and companion support travel programs to conferences, although participation since approval of these programs has been low. Reimbursement for child care is capped at

$1000 per conference. SIGARCH has also formalized funding levels for its travel grant program, and now provides a level of support to all conferences that SIGARCH sponsors at a 33% level or higher, which previously was only provided to the ISCA and ASPLOS conferences. At ISCA 2010, SIGARCH partnered with the National Science Foundation and IEEE to provide $44,500 total in student travel grants ($20,000 of which came from SIGARCH), providing 79 total awards to students. SIGARCH awarded a total of $70K in student travel across all conferences in 2010. Also in 2010, SIGARCH co-sponsored (with Microsoft Research) the ACM Turing Lecture held at ISCA 2010, with each institution contributing $20K for the lecture and banquet.

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