SIGARCH Annual Report
July 2010 - June 2011

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 as the SIGARCH Information Director, providing SIGARCH information online. Rob Schreiber serves as SIGARCH's liaison on the SC conference steering committee.

In the spring, SIGARCH elections were held for the next term, effective July 1, 2011. The new officers are: David Wood as SIGARCH Chair, Sarita Adve as Vice Chair, Partha Ranganathan as Secretary/Treasurer, and Kai Li, Norm Jouppi, Per Stenstrom, and Scott Mahlke on the Board of Directors. Doug Burger will serve as Past Chair. Nate Binkert continues to serve as Information Director. Rob Schreiber continues to serve 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. Gurindar S. Sohi of the University of Wisconsin received the award in 2011, for "pioneering widely used micro-architectural techniques for instruction-level parallelism." In 2009, 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 Kevin Skadron of the University of Virginia, for "contributions to thermal-aware computer architecture modeling and design."

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 seventh Influential ISCA Paper Award was presented to Dean Tullsen, Susan Eggers, Joel Emer, Hank Levy, Jack Lo, and Rebecca Stamm for their paper "Exploiting Choice: Instruction Fetch and Issue on an Implementable Simultaneous Multithreading Processor" which appeared in the proceedings of the 23nd ISCA (1996).

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. In 2011, the third ASPLOS Best Paper Award was jointly awarded to two papers. The first co-award went to Kaushik Veeraraghavan, Dongyoon

Lee, Benjamin Wester, Jessica Ouyang, Peter Chen, Jason Flinn, and Satish Narayanasamy for their paper "Doubleplay: Parallelizing Sequential Logging and Replay." The second co-award went to Vitaly Chipounov, Volodymyr Kuznetsov, and George Candea for their paper "S2E: A Platform for In Vivo Multi-Path Analysis of Software Systems."

Starting in 2011, ASPLOS began awarding an "Influential Paper Award," modeled after the award presented at ISCA. The ASPLOS Influential Paper Award is awarded to any paper published in ASPLOS conferences ten or more conferences prior to the conference in which the award is being made. The first ASPLOS Influential Paper Award was made to the paper "The 801 Minicomputer," by George Radin, which appeared in the first ASPLOS conference in 1982.

In 2007 the ACM Awards Committee approved the establishment of the SIGARCH Distinguished Service Award, for "important service to the Computer Architecture community." The fifth recipient was David Patterson of UC-Berkeley, who has served on SIGARCH's executive board, led in computer architecture education, and recently served as President of the ACM 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 Ken Kennedy Award, founded in 2009. 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 2010 recipient of the Ken Kennedy Award was David Kuck, for "his pioneering contributions to compiler technology and parallel computing, the profound impact of his research on industry, and the widespread and long-lasting influence of his teaching and mentoring."

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 2011 in San Jose, CA.

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 38th annual ISCA (ISCA 2011) was held in San Jose, CA, as a part of FCRC. Qing Yang and Ravi Iyer were the General Co-Chairs, and Antonio Gonzalez was the Program Chair. ISCA 2012 will be held in Portland, OR, with Shih-Lien Lu as General Chair and Josep Torrellas as Program Chair. Competing bids are still under consideration for the ISCA 2013 location.

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 2010 was held in New Orleans, LA. SC 2011 will be held in Seattle, WA.

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 2011 was held in Newport Beach, 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 2011 was held in Tuscon, AZ, with David Lowenthal as General Chair and Sally McKee and Bronis R. de Supinski as Program Co-Chairs. ICS 2012 will be held in Venice, Italy. Kyle Gallivan and Utpal Banerjee will be General Co-Chairs and Gianfranco Bilardi and Manolis Katevenis will be Program Co-Chairs.

The nineteenth Symposium on Parallel Algorithms and Architectures (SPAA 2011), jointly sponsored by SIGARCH and SIGACT, was held in San Jose, CA as a part of FCRC. The General Chair was Friedhelm Meyer auf der Heide, and the Program Chair was Rajmohan Rajaraman. SPAA 2012 will be held in Pittsburgh, with Guy Blelloch as General Chair and Maurice Herlihy as the Program Chair.

SIGARCH is one-half co-sponsor of the IEEE/ACM International Conference on Grid Computing. Grid 2010 was held in Brussels, Belgium, with Neil P Chue Hong as General Chair and Laurent Lefevre as Program Chair. Grid 2011 will be held in Lyon, France, with Nils gentschen Felde as General Chair and Shantenu Jha as Program Chair.

SIGARCH is one-half cosponsor of the International Symposium on High Performance Distributed Computing. HPDC 2011 was held in San Jose, CA as part of FCRC, with Arthur Maccabe as General Chair and Douglas Thain as Program Chair. HPDC 2012 will be held in Delft, The Netherlands, with Dick Epema as General Chair and Thilo Kielmann and Matei Ripeanu as 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 2010 was held in Vienna, Austria, with Valentina Salapura as General Chair and Michael Gschwind and Jens Knoop as Program Co-Chairs. PACT 2011 will be held in Galveston, Texas, with Laurence Rauchwerger as General Chair and Vivek Sarkar as Program Chair.

SIGARCH is one-fourth co-sponsor of the Symposium on Architectures for Networking and Communications Systems (ANCS). The sixth ANCS was held in La Jolla, CA, with Bill Lin as General Chair and Ravi Iyer and Jeffrey Mogul as Program Co-Chairs. ANCS 2011 will be held in Brooklyn, NY, with H. Jonathan Chao as General Chair and Jose Duato and Tilman Wolf as Program Co-Chairs.

In 2007 SIGARCH was a founding co-sponsor of the International Symposium on Networks-on-Chips (NOCS). NOCS 2011 was 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. NOCS 2012 will be held in Copenhagen, Denmark. Jens Sparsø and Jan Madsen will be General Co-Chairs, and Diana Marculescu and Chita Das will be Program Co-Chairs.

SIGARCH also became a cosponsor of the International Conference on Autonomic Computing (ICAC) in 2007. ICAC 2011 was held in Karlsruhe, Germany, with Hartmut Schmeck and Wolfgang Rosenstiel as General Co-Chairs, and Tarek Abdelzaher and Joe Hellerstein as Program Co-Chairs. ICAC 2012 will be in San Jose, CA, with Dejan Milojicic as General Chair and Vanish Talwar and Dongyan Xu and Program Co-Chairs.

In addition to the above conferences, SIGARCH is co-sponsoring, or in cooperation with, several other conferences. SIGARCH has a sponsorship position in SenSys, a conference on Sensor Systems. In addition, SIGARCH has in-cooperation status with TridentCom, DOCSS, Euro-Par, GridNets, HiPC, 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 2011, SIGARCH matched NSF funding of $15K with matching funding from IEEE TCCA ($7.5K) and corporate funding of $3K (from Google and FusionIO), and used these funds to support 163 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 2010-11, SIGARCH had one application for such travel grants.

SC Conference Grants

In 2010, the SC leadership requested $273,528 in funds for special projects related to the SC community. For SC'11, $437,111 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, 494 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'11 is $3.120,204. SIGARCH loses money on each member, but makes money on average from conferences. (E-membership will help reduce the small losses we incur on memberships.) The SC conference often has a large surplus due to its exhibition component, but did not in 2010. Given prior large surpluses, 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.

Membership

SIGARCH membership was declining gradually since 1999, dropping from its peak of 1452 in 2005 to 1344 in 2009, but has started to recover, increasing to 1393 as of Mar. 2011. 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, 494 of SIGARCH's members had chosen electronic-only membership. 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 2011, SIGARCH partnered with the National Science Foundation, IEEE, Google, and FusionIO to provide $45,500 total in student travel grants ($20,000 of which came from SIGARCH), providing 163 total awards to students. SIGARCH awarded a total of $45K in student travel across all conferences in 2010

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,

David Wood, SIGARCH Chair
Doug Burger, SIGARCH Past Chair