

SIGARCH Annual Report

July 2024 – June 2025

1. Health and Viability

Every year we report on our activities and initiatives along the three pillars in our mission statement – technical exchange, talent development and recognition, and outreach. These three pillars have a strong emphasis on diversity and inclusion with initiatives that have impacted communities across ACM and beyond.

As later sections of the report will show, our conference attendance and paper submission rates are very healthy to the point of placing pressure on our venues and review systems. We maintain a healthy fund balance that allows us to support a range of activities. SIGARCH members are actively engaged in our various activities and the SIG continues to perform well.

2. Efforts related to Diversity, Equity and Inclusion

Efforts to support diversity, equity and inclusion have been a key focus of SIGARCH in recent years. We continue to maintain a wide range of programs to build and maintain an inclusive community.

- (1) **Student mentoring:** “Meet a Senior Architect (MASA)” runs together with “Meet a Senior Student (MASS)” launched by CASA at our conferences. The programs match students with mentors (through questions asked in the conference registration form), providing students the opportunity to meet 1-on-1 with a senior architect or a senior student for about half an hour at the conference. These programs ran virtually during COVID. Mentorship is now codified at ISCA, ASPLOS and MICRO as a service with an assigned chair on the conference organizing committee and guidelines about how to run the mentorship programs. These programs collectively boast several hundreds of mentees and mentors in our conferences. ISCA faced some logistical problems running MASA due to record high registration. We will work with the ISCA 2026 General Chairs to ensure the program runs again next year. As of 2022, CASA has launched an online mentorship platform called CALM which offers services beyond conferences and meeting events.
- (2) **Women In Computer Architecture (WICARCH):** WICARCH became a SIGARCH sponsored subcommittee in 2018 as part of SIGARCH to build a community of female architects, celebrate their accomplishments, and boost talent development for women in architecture. WICArch is currently chaired by Kelly Shaw with a portfolio of activities including an annual flyer showcasing women graduates in the academic market, virtual seminars, reading groups, industry engagement and conference meetups. In 2024, they launched an early career travel grant program that supports the one WICARCH member to attend ISCA. In return for receiving the travel, the WICARCH member must organize a networking or professional development activity for WICARCH at the conference. Olivia Hsu received the grant for ISCA 2025 and organized a successful WICARCH reception that included a four person panel of researchers spanning different career stages and trajectories. WICARCH has also been organizing regional meet-ups among members to foster a greater sense of community and connect female researchers without the cost of attending conferences.

- (3) **Computer Architecture Student Association (CASA):** CASA is an independent student-run organization with the express purpose of developing and fostering a positive and inviting student community within computer architecture. CASA is now run by a steering committee of 13 members. SIGARCH has been co-sponsoring CASA together with IEEE TCCA with funds for activities aligned with its mission. SIGARCH also hosts CASA on the sigarch.org website. We have funded CASA for hosting balanced mental health seminars for graduate students and networking events including a joint dinner for ISCA with PLDI students at FCRC'23.
- (4) **Talent development grants:** We have launched financial support for initiatives aimed at developing talent, improving well-being, and advancing diversity and inclusion for the computer architecture community. The Undergrad Architecture Mentoring Workshop (Uarch) targets boosting participation from undergrads in parts of the world and institutions with lower average participation at computer architecture conferences. In 2025, the workshop was held at ISCA in Tokyo. Given this, the focus was on schools in Asia. Over 32% of attendees in-person attendees came from this region. The 2025 edition supported 40 in-person attendees and 60 virtual attendees from 9 countries and 19 schools (in person). Countries outside of North America included Ethiopia, Germany, India, Ghana, Poland, Korea and Japan.
- (5) **Student travel grants:** Student travel grants for conferences are among our flagship benefits for student members. All conferences where SIGARCH co-sponsors at a level greater than 33% are eligible for student travel grant support at levels of \$5K-\$20K. Survey results in 2016 indicated that 39% of the respondents said they would come to ISCA only if they received some travel grant and 5% of the students used personal funds to cover the difference between actual costs and these travel grants. In 2025, we continued supporting our student members through the travel grants at sponsored conferences. We are planning to increase travel grant support in 2026 due to increasing cost of conference attendance and funding uncertainty faced by some members of our community due to NSF cuts.
- (6) **Diversity and inclusion grants:** SIGARCH provides financial support for a number of initiatives aimed at developing talent, improving well-being, and advancing diversity and inclusion for our members at various levels of seniority at SIGARCH-sponsored events. In 2025, we continued to support CASA, the Undergrad Architecture Mentoring Workshop (Uarch), Young Architect Workshop (Yarch).
- (7) **Companion assistance and childcare grants:** SIGARCH was a pioneer in supporting travel grants for companions for childcare or disability support for those attending professional meetings while traveling. These have expanded to supporting on-site childcare in recent years.

3. Award recipients

We have a number of awards that are given annually either by ACM/IEEE directly, by SIGARCH alone, or SIGARCH together with TCCA. Martha Kim is our Awards Chair and coordinates the Maurice Wilkes and Alan Berenbaum awards. The Dissertation award has an alternating chair between a SIGARCH EC and a TCCA EC member every year. José Martinez coordinates the CACM highlights. The influential paper awards are coordinated by the conference chairs together with the respective steering committees or SIGARCH/TCCA chairs.

(1) ACM/IEEE Eckert-Mauchly award: This is the most prestigious award in our community given for contributions to computer and digital systems architecture. The 2025 recipient was André Seznec for “For pioneering contributions to branch prediction and cache memories.”

(2) SIGARCH Maurice Wilkes award: This is the most prestigious award given to a researcher in the first 20 years of their career. The 2025 recipient was Carole-Jean Wu “For pioneering computer architecture research to enable efficient, scalable, and sustainable machine learning.”

(3) SIGARCH/TCCA influential ISCA paper award: In the past year, SIGARCH and TCCA agreed to modify the terms of this award. The new award proposal was approved by the SGB Awards committee and the ACM Awards committee. Previously, this award had recognized a paper from the ISCA 15 years earlier. Starting in 2024 and moving forward, the Influential Paper award recognizes a paper from ISCA 20 years ago +/- 2 years. This sliding window will allow papers to be eligible across multiple years and is more consistent with Influential paper awards given in other computer architecture conferences such as IEEE/ACM International Symposium on Microarchitecture (sponsored by SIGMICRO) and IEEE International Symposium on High Performance Computer Architecture (sponsored by TCCA). The 2025 recipient was “New Cache Designs for Thwarting Software Cache-based Side Channel Attacks” by Zhenghong Wang and Ruby B. Lee, which appeared in the 34th International Symposium on Computer Architecture in 2007.

(4) ASPLOS influential paper award: This award recognizes ASPLOS papers from 10 or more years ago. The 2025 recipients were “PowerNap: Eliminating Server Idle Power” from ASPLOS 2009 by David Meisner, Brian T. Gold, Thomas F. Wenisch and “Unikernels: Library Operating Systems for the Cloud” from ASPLOS 2013 by Anil Madhavapeddy, Richard Mortier, Charalampos Rotsos, David J. Scott, Balraj Singh, Thomas Gazagnaire, Steven Smith, Steven Hand, Jon Crowcroft.

(5) SIGARCH Alan D. Berenbaum Distinguished Service Award: This award is presented annually to an individual who has contributed important service to the computer architecture community. The 2025 recipient was Joel Emer “For creating the Meet a Senior Architect program and more broadly for decades of exemplary mentoring and visionary leadership to build a culture of inclusion and technical excellence across the computer architecture community.”

(6) SIGARCH/TCCA Outstanding Dissertation Award: This award is presented annually to recognize excellent thesis research by doctoral candidates in the field of computer architecture. The 2025 recipient was Sagar Karandikar from UC Berkeley “For advancing the state-of-the-art in agile hardware/software co-design tools and deploying them at a hyperscaler to architect custom hardware that eliminates costly system-level WSC inefficiencies.” Honorable mention went to Abdullah Giray Yağlıkçı from ETH Zurich “For providing impactful new experimental insights into DRAM read disturbance and developing fundamentally new and effective solutions for it” and Rachit Nigam from Cornell “For contributions to the design and implementation of safe, productive languages for hardware design.”

(7) CACM Research Highlights: SIGARCH has a four-member standing committee to nominate papers for CACM Research Highlights. The candidate papers are solicited through a survey of conference attendees as well as nominations by Program Chairs of the most prestigious conferences sponsored by SIGARCH. These candidates are then forwarded to the CACM

Editorial Board to make the final decision. The nominated papers are also listed on our [website](#) to reflect the high prestige of the papers being selected. Papers nominated this year were “Automatic Generation of Vectorizing Compilers for Customizable Digital Signal Processors” by Thomas & Bornholt, ASPLOS’24; “Priority Directed Instruction Prefetching” by Godala et al., ASPLOS’24; “HiFi-DRAM: Enabling High-fidelity DRAM Research by Uncovering Sense Amplifiers with IC Imaging” by Marazzi Li et al., ISCA’24.

(8) ISCA and ASPLOS Best paper awards: In 2022, ISCA started giving out a best paper award. This year the best paper award went to: (1) “Precise exceptions in relaxed architectures” by Ben Simner, Alasdair Armstrong, Thomas Bauereiss, Brian Campbell, Ohad Kammar, Jean Pichon-Pharabod, Peter Sewell and (2) “H2-LLM: Hardware-Dataflow Co-Exploration for Heterogeneous Hybrid-Bonding-based Low-Batch LLM Inference” by Cong Li, Yihan Yin, Xintong Wu, Jingchen Zhu, Zhutianya Gao, Dimin Niu, Qiang Wu, Xin Si, Yuan Xie, Chen Zhang, Guangyu Sun. ASPLOS has a long history of giving best paper awards. This year, 6 papers were recognized by the program committee: (1) “CXLfork: Fast Remote Fork over CXL Fabrics” by Chloe Alverti, Stratos Psomadakis, Burak Ocalan, Shashwat Jaiswal, Tianyin Xu, Josep Torrellas; (2) “xUI: extended User Interrupts” by Berk Aydogmus, Linsong Guo, Danial Zuberi, Tal Garfinkel, Dean Tullsen, Amy Ousterhout, Kazem Taram; (3) “H-Houdini: Scalable Invariant Learning” by Sushant Dinesh, Yongye Zhu, Christopher W. Fletcher; (4) “MetaSapiens: Real-Time Neural Rendering with Efficiency-Aware Pruning and Accelerated Foveated Rendering” by Weikai Lin, YuFeng, Yuhao Zhu; (5) “Orion: A Fully Homomorphic Encryption Framework for Deep Learning” by Austin Ebel, Karthik Garimella, Brandon Reagen; (6) “SmoothE: Differentiable E-Graph Extraction” by Yaohui Cai, Kaixin Yang, Chenhui Deng, Cunxi Yu, Zhiru Zhang.

(9) Honoring retirees: Jointly with TCCA, we launched a program in 2017 to honor at ISCA the contributions of members of our community who are retiring or have recently retired. We did not have any announced retirees in 2025.

(10) Remembering recently departed members: With TCCA, we also launched a program at ISCA in 2017 to remember members of our community who have passed away. At ISCA’25, we mourned the passing of two significant members of our community: Derek Chiou from UT Austin/Microsoft and Sally McKee from Clemson.

4. Significant papers published in proceedings

As noted above, we continue to nominate multiple papers each year as CACM Research Highlights representing some of significant work being published in our community. As later sections indicate, submission rates for our top conferences continue to increase and both ISCA and ASPLOS have published a large number of papers well above the 5 year average. The computer architecture community continues to publish high impact work at the intersection of architecture, systems, programming languages, devices, and machine learning among other topics.

5. Conference Activities

SIGARCH (co-)sponsors a strong portfolio of conferences, many of which co-host a variety of highly attended specialized workshops and tutorials on leading-edge topics. We highlight below two conferences: ISCA, the premier conference for computer architecture (co-sponsored with

IEEE-CS TCCA), and ASPLOS, the premier multidisciplinary systems conference that brings together architecture, programming languages, and operating systems (co-sponsored with SIGPLAN and SIGOPS).

(1) ISCA: The 52nd ISCA was held in Tokyo in June 2025. The conference featured 20 workshops, 13 tutorials, two keynotes, an industry track session, and 28 technical paper sessions (with 570 papers submitted and 132 accepted, a significant increase from last year which featured 83 accepted papers). The credit for the success of ISCA 2025 also goes to the record setting 1280 in-person participants from all over the world, and to an equally passionate group of organizers who raised \$160K in industrial sponsorship funds for the conference during this difficult financial year for our industry. It is notable that ISCA had to close registration prior to the conference as the venue was at capacity and could not accommodate more participants. With additional funding from SIGARCH, TCCA, and NSF, ISCA'25 provided student travel grant support to 122 students. An additional 2 companion and childcare assistance travel grants were provided to attendees.

(2) ASPLOS: ASPLOS'25 was held in Rotterdam, Netherlands. It was co-located for the first time with EuroSys. The conference was run for the third time with a multi-deadline review process allowing more time for the authors to decide when to submit their papers throughout the year and an extended window for revision and resubmission. In the first two years, this new process increased the number of submissions by nearly 50% and 57% and resulted in a program with 155 and 193 accepted papers respectively. ASPLOS 2025 featured 184 accepted papers and received 920 submissions. ASPLOS 2024 received 922 submissions – given the dramatic increase of the previous two years, we are pleased to see the number of submissions held steady as our review system is under a lot of pressure. The 184 papers presented at ASPLOS were organized into 4 parallel tracks. EuroSys additionally provided 2 tracks, giving attendees 6 parallel tracks to choose from. The program included two joint keynotes, 22 workshops, and 12 tutorials and had a total of 1111 in person attendees where roughly $\frac{2}{3}$ of the attendees were primarily attending for ASPLOS.

6. Special Projects

Boris Grot continues to lead the communication team. The communication team includes Adarsh Patil as content editor (for the website, announcements, and the newsletter), Elba Garza and Jonathan Balkind as social media editors (we've transitioned our social media presence away from X to Mastodon and LinkedIn), and Jayneel Gandhi as the video editor in charge of the SIGARCH YouTube! channel. The YouTube! channel has continued to serve as a platform to host all recordings for the virtual/hybrid conferences, starting with ASPLOS'20.

(1) Computer Architecture Podcasts: The Computer Architecture Podcasts run by Lisa Hsu and Suvinay Subramanian as the editors interviews leading figures in the architecture community about cutting-edge topics in architecture, their vision, and career experiences. The podcast celebrated its 5th anniversary this year. As of May 20, 2025, the podcast has been downloaded 53,000 times across 19 episodes with listeners hailing from around the world including Estonia, Ghana, Saudi Arabia, Vietnam, and many more countries. The podcasts are available in standard formats and are hosted at comparechpodcast.podbean.com. In 2025, the podcasts enjoyed 14,000 downloads, a decline of 15% from last year (however, 2024 featured the most popular episode to date and listener trends remain steady otherwise).

(2) Computer Architecture Today (CAT): In 2025, CAT continued serving as a successful platform for our community members and those in related fields to discuss diverse topics of interest. Dmitry Ponomarev continues in his role as editor. In the past year, CAT featured 37 new blog posts (45% increase from last year) with over 131K views (30% increase from last year).

We continue to support initiatives from the previous EC aimed at improving our communities overall health and maintaining trust in our review processes. These initiatives include extending CARES' mandate to cover aid with reporting violations of publication and review policies and code of ethics, announcing clear ethics guidelines to all program committee members at ISCA and ASPLOS, and tightening security and activity tracking in HotCRP. In collaboration with TCCA, and under Martha Kim's leadership we have outlined, created and maintained "packets" for Program Chairs and General Chairs, best practices for conference reviewing and best practices for program chairs (with Boris and José collaborating with Daniel Jiménez and Moin Qureshi of TCCA). Martha has also created and maintained a document outlining guidelines for SIGARCH sponsored conferences that include high standards for review processes, well-articulated processes for the creation and maintenance of a steering committee and a commitment to diversity and inclusion from organizers. We are continuing to work on the launch of ConflictDB. In 2020, we launched the development of ConflictDB that enables tracking both DBLP-crawled and self-declared conflicts (through two-way confirmation) for use by the community across multiple computer architecture conferences. We have finished the development and hope to pilot the platform soon. We are developing a plan to aid in training PhD students to become effective conference reviewers when they graduate. We are hoping to put this plan into action in the coming year.

7. Key Issues

We have concerns that our SIG members are not well-aware or well-prepared for the transition to ACM Open. We have messaged our members via our SIGARCH Business Meeting about the upcoming transition and encouraged members to determine if their institution is participating and to reach out to their library if they have not yet signed up. We were pleased to see an increase in the number of published papers that would be covered by ACM Open in the past year and look forward to working with ACM to facilitate the transition with our members.

As noted above, ASPLOS and ISCA have grown substantially in submissions in recent years. This has created a very high workload on program chairs and program committee members and reviewers. We are facing scalability issues in terms of scaling the review workload while maintaining a fair and consistent process and also scaling up the conferences themselves in terms of increasing the number of parallel tracks. We are also seeing a trend where a small fraction of authors are submitting a large number of papers. This concerns us on multiple fronts: 1) these authors are putting increased pressure on the review system and 2) the ethics of a single author contributing to 20+ submissions are dubious. Although we do not have evidence, we worry about gift authorship or other practices that may indicate these authors are not making an intellectual contribution to their papers. We worry about trends of increasing paper counts that are prioritizing quantity over quality. Our final review-related concern is around the use of LLMs in the review process. We see some use of LLMs by reviewers that go beyond just fixing grammar and polishing writing. We also see some members of the community arguing for greater use of LLMs in reviewing and arguing that LLMs produce higher quality reviews than the average reviewer.

The role that LLMs can and should play in reviewing will become a more urgent topic of discussion among the SIGARCH EC this year.

Finally, industrial sponsorship of conferences continues to be a concern due to current economic conditions. ISCA 2025 did an outstanding job of raising industrial sponsorship, aided by bringing in local sponsorship from Japanese companies that may have not historically sponsored ISCA. This coupled with increasing hotel costs following the pandemic have placed a burden on organizers to put together a conference experience that our attendees will appreciate while controlling costs. We are reluctant to raise conference registration rates as they are already quite high. Furthermore, the increasing burden of organizing our growing conferences during financially challenging times has made the role of General Chair less attractive to our members and recruiting future general chairs may be challenging. Additionally, ISCA 2026 will return to the US; we have some concerns about attendance at a US event given the reluctance of many international attendees to travel to the US in the current political climate. We would appreciate hearing the experience of recent US-based conferences and whether there were attendance impacts in 2025.

SUMMARY

SIGARCH remains a financially healthy and vibrant organization while increasing the scope of its initiatives to sponsor activities for technical exchange, talent development, and recognition, outreach, and grants/support programs with a strong emphasis on diversity and inclusion. It takes a village to launch and deliver on these initiatives. We would not be able to realize our vision without the dedication of a large number of volunteers in various [committees](#). We gratefully acknowledge the ACM staff, notably our liaison Katie Balben, for her support and for graciously handling the increased workload.

Respectfully submitted,

Natalie Enright Jerger, Chair

On behalf of the SIGARCH Executive Committee

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