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Sommario/riassunto It is my pleasure and privilege to serve as program chair for ASPLOS

2016 -- the Twentieth International Conference on Architectural Support for Programming Languages and Operating Systems. This year's conference has set new records in terms of the number of submissions, and reinforces ASPLOS's tradition of encouraging work on innovative multidisciplinary research spanning computer architecture and hardware, programming languages and compilers, operating systems and networking, and applications. The 2016 conference saw a record. 232 submissions with a total of 986 (unique 877) paper authors from 240 institutions spread across at least 21 countries and spanning 5 continents: a clear indication that our community is growing, and that ASPLOS is the premier venue of choice for disseminating high quality interdisciplinary work. There was a wide diversity in topics, ranging from DNA computer storage to human computer interaction, with the most popular being heterogeneous architecture and accelerators, security, reliability and debugging, and memory management. 55 papers self-identified as relating to architecture, 55 to parallelism, 59 to operating systems, 40 to programming models and languages, and 20 to compiler optimizations. Some Notes on the Review Process: All reviewing and discussion, including that at the PC meeting, was double

blind. As in past ASPLOS conferences, I used a 2-phase review process, with each paper receiving 3 reviews in round 1, and a minimum of an additional 2 reviews in round 2. In order to improve the quality of review assignment, in conjunction with the paper title and abstract (with sometimes a need to skim the paper directly), I used a combination of topic and interest match with reviewers, and suggestions for reviewers from both the authors and the round 1 reviewers (during the round 2 assignment). I continued to monitor reviews for papers through both rounds 1 and 2 as they came in for quality, substance, and tone, to correct any expertise mismatch, and to find experts in the multiple areas each paper might span, including experts outside of the program and external review committees, a step that is essential for a conference with the breadth that ASPLOS covers. Reviewer feedback in this process was extremely helpful. In keeping with ASPLOS'15 and other conferences, not all papers were moved to round 2. In particular, papers with no round 1 reviews advocating acceptance, and with clear consensus (based both on substantive review content and comment exchange) among the reviewers that the paper did not rise above the acceptance bar for the conference, did not move to round 2. Approximately 35.27% of the papers fell in this category. Each of these decisions involved the active participation of all the reviewers. After the rebuttal phase, each paper was assigned a discussion lead. The discussion lead's job was to carefully read all reviews, the rebuttal, and prior online comments (several papers had extensive online discussions after both rounds 1 and 2), and then initiate a discussion with the goal of reaching a conclusion on whether papers were to be accepted, rejected, or discussed at the PC meeting. The goal of the discussion lead (and my monitoring) was to ensure that every reviewer participated in the discussion after reading the other reviews and the rebuttal. During this process, if new reviewers were considered required based on the rebuttal content, they were sought. The program committee meeting was held at the Chicago O'Hare Hilton on November 7th, 2014. All but four PC members were in attendance. due to medical emergencies or health issues. PC members had access to the reviews for all papers for which they had no declared conflict. Paper authors were not revealed during the PC meeting, and since the discussion continued to be blind, PC papers were not singled out for separate discussion. PC members were asked to leave the room for papers for which they were declared as a conflict (which included any papers they were authors on) prior to revealing the paper title and number being discussed. During the PC meeting, all papers categorized as a preliminary accept (15) were discussed first. The PC also had a chance during and prior to the PC meeting to bring up papers for discussion thatwere classified as tentatively rejected (i.e., all papers were open for discussion at the PC meeting). The majority of the time during the PC meeting was spent on the papers categorized as needing discussion. The result of the extensive reviewing, online discussion, and PC meeting is now in your hands for your reading pleasure, with 53 accepted papers. 16 of which were shepherded. In addition to the decision process, for every paper where the authors chose to provide a rebuttal, the discussion lead, in collaboration with the other reviewers, provided the authors with a summary outlining the main criteria leading to the decision outcome for the paper (whether or not the rebuttal answered reviewer questions or addressed concerns or shortcomings expressed in the reviews), along with feedback for improvement. The Program: In addition to the 53 accepted papers, the conference includes two invited keynote speeches. Richard Stanley Williams, a senior fellow at HP, will talk about memristors and sensible

machines. Kathryn McKinley from Microsoft Research will give a talk on how to program uncertain things. We will maintain the tradition of past ASPLOS conferences in convening a Wild and Crazy Ideas (WACI) session, organized by Dan Tsafrir, and a debate session organized by Emmett Witchel. Each of which has a group of inspiring speakers line up to provoke thoughts and discussion among the audience and the whole community. Lightning sessions, each morning, managed by Ding Yuan, will provide a quick introduction to the key ideas that will be presented in the talks that day. The authors also have one more chance in the poster session to present their work and get feedback.