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MobiSys '23

Proceedings of the 21st ACM International Conference on
Mobile Systems, Applications, and Services

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***Petteri Nurmi**, University of Helsinki*

***Pan Hui**, Hong Kong University of Science and Technology (Guangzhou) and University of Helsinki*

Program Chairs:

***Ardalan Amiri Sani**, University of California Irvine*

***Yunxin Liu**, Institute for AI Industry Research (AIR), Tsinghua University*

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Welcome Message from the General Chairs

On behalf of the entire organizing committee, it is with immense pleasure that we invite you to the 21st ACM International Conference on Mobile Systems, Applications, and Services (ACM MobiSys 2023) held in Helsinki, Finland on June 18 - 22, 2023. Since the previous year's event, which was the first in-person event since the beginning of the pandemic, a lot has happened. The WHO declared the pandemic to be officially over, but the world remains shrouded by an uncertain outlook, including a tough economic climate. Nevertheless, MobiSys continues strong and remains the leading conference for innovative research in mobile systems, applications, and services. As the chairs of the organizing committee, we are delighted and excited to be able to welcome you in-person in Helsinki, Finland.

We begin with a special thanks to our sponsors. ACM, SIGMOBILE, Bosch Sensortec, Google, Microsoft, the City of Helsinki, NSF, and the University of Helsinki. We are grateful to the University of Helsinki for providing consistent support in hosting the conference.

We are proud that the program committee, led by the co-chairs Ardalan Amiri Sani and Yunxin Liu, have compiled an excellent technical program by selecting 41 outstanding papers from 198 submissions (21% acceptance rate) that are presented at the conference. We express our deepest gratitude to the entire program committee for their work and effort at making a strong technical program.

Reproducibility of research results is critical for science and this year special attention was placed on rewarding papers that promote and support reproducibility. This process was handled by the artifact evaluation committee, which was expertly led by Przemysław Pawełczak and Robert LiKamWa. In total, 16 (39%) of the accepted papers received at least one badge. The conference featured for the first time a separate artifact evaluation committee, and the artifact process features as part of the award programme for the first time. We thank the entire artifact committee for their work and effort at validating the artifacts and helping to make the artifacts a prominent part of the program. We hope future conferences can build on the excellent work and process set out by the artifact committee.

The conference program also features three impressive keynote presentations. We are grateful to Scott Burleigh from California Institute of Technology, Mikko Uusitalo from Nokia Bell Labs, and Yong Li from Tsinghua University. We thank the keynote presenters for their presentations and for sharing their insights and experiences.

The conference is co-located with multiple workshops on emerging and evolving topics. The workshops offer an opportunity to discuss potential new topics, to share insights, and to network. We thank the workshop chairs, Zheng Wang and Yang Chen who worked hard to coordinate and organize a strong workshop program that features 6 workshops. We also express our gratitude to the organizers of the individual workshops and the workshop participants.

The conference continues the tradition of hosting a dedicated IoT day. The chairs, Jörg Ott and Stephan Sigg, compiled an excellent program that includes a keynote talk, sessions with invited

talks on emerging IoT topics, and a panel discussion on privacy and ethics in IoT. We are grateful to all the presenters and panelists.

The conference features interactive and social technical forums for posters and demonstrations. In total, 15 posters and 13 demonstrations were selected for the presentation. We are thankful to the poster chairs, Huber Flores and Sourav Bhattacharya, and the demonstration chairs, Xiang Su and Pengyuan Zhou, for their work and effort in composing and organizing these sessions.

An important focus for this year's conference has been support for students. This was considered particularly important given the difficult and uncertain economic situation. Student participation is boosted by an outstanding Rising Star Forum, organized and chaired by Chenren Xu and Qing Wang. The conference also has an extensive travel grant program, which was run excellently by the travel grant chairs, Gareth Tyson, Gang Wang, and Susanna Pirttikangas. The grant program was highly successful, and 16 grants were awarded. The travel grants were generously supported by NSF and SIGMOBILE.

Complementing the visible activities are other critical tasks that form the backbone of the conference. The publication process was overseen by Ngoc Thi Nguyen and Tristan Braud, who worked through a very tight schedule to make sure the proceedings not only were ready in time but also that all contributions were included in the proceedings. The sponsorship chairs, Roberto Morabito and Aaron Yi Ding, worked tirelessly and successfully to seek corporate sponsorship. The registration chairs, Xiaoli Liu and Gopika Premsankar, handled the registration process excellently. The publicity chairs, Ella Peltonen, Lik-Hang Lee, and Bo Han, have been advertising the conference extensively, including publishing information in social media. The video chairs, Agustin Zuniga and Zhigang Yin, made sure videos of the contributions and the conference talks were available online, including on the conference website and in social media channels. Special thanks to Boyu Fan and Xian Wang for continuously making sure that the conference website was informative, detailed, and up to date. Finally, we express our deepest gratitude to the local organizing team, led by Ashwin Rao and Naser Hossein Motlagh, which has worked tirelessly to ensure the best possible conference experience.

Naturally there have also been challenges along the way. As the world was emerging from one crisis, new challenges have emerged, and the organization process has been carried out under significant uncertainties. We would like to express our sincerest gratitude to ACM and SIGMOBILE, our sponsors, all organizing committee members, program committee members, artifact evaluation committee members, keynote speakers, and volunteers. Thanks to everyone's hard work, the conference has a very strong program and these challenging times have been navigated through excellently. Finally, our sincere thanks to each conference participant.

ACM MobiSys 2023 General Co-Chairs

Petteri Nurmi
University of Helsinki

Pan Hui
Hong Kong University of Science and Technology (Guangzhou) & University of Helsinki

Welcome Message from the Technical Program Committee Chairs

It is our great pleasure to welcome you to the 21st ACM International Conference on Mobile Systems, Applications, and Services, i.e., ACM MobiSys 2023. Over the past two decades, MobiSys has cemented itself as one of the flagship conferences in mobile computing and systems research. We are happy to continue this trend with a strong program this year.

To review the papers submitted to MobiSys 2023, we put together an excellent and highly qualified set of researchers in our Technical Program Committee (TPC). The TPC comprised 56 researchers from 12 countries and 50 universities/organizations.

This year, we received 198 submissions. We rejected 4 of these submissions because they did not adhere to the submission requirements of MobiSys. We reviewed the rest of the papers in a two-round review process. In round 1, each paper received 3 reviews. This was followed by an online discussion phase, resulting in 63 of the papers being rejected. We sent out early-rejection notifications after round 1 in order to provide timely feedback for the authors of these papers.

131 papers advanced to round 2, where they received 2 additional reviews. Round 2 was followed by a rebuttal process, a first for MobiSys. The authors were asked to provide a rebuttal of at most 500 words. The reviewers then studied and discussed the rebuttal (as well as their reviews) in an online discussion phase, during which 86 papers were selected for discussion in the TPC meeting. We believe this is the highest number of papers to be discussed in a MobiSys TPC meeting.

The TPC meeting spanned across 1.5 days (which we also believe is a first for MobiSys). The meeting was held in person in Orange County, CA (collocated with HotMobile'23), although some members joined virtually. The TPC spent a total of 16 hours discussing the papers and made sure all the selected submissions were discussed adequately. The TPC also made a concerted effort to have a positive attitude and accept all good submissions. We believe this attitude paid off and the TPC conditionally accepted a total of 41 papers, which is also a record for MobiSys.

We assigned shepherds to all conditionally accepted papers. The shepherding process was double-blind, similar to the review process itself. The authors worked closely with their shepherds to improve their papers. All conditionally accepted papers successfully completed the shepherding process.

Continuing the tradition of artifact evaluation in MobiSys, all conditionally accepted papers were given a chance to submit their artifacts for rigorous evaluation. 16 papers submitted their artifacts and received at least 1 badge.

Putting together the program for MobiSys takes a huge amount of effort and is only possible through collaboration of a large set of individuals. We are very thankful to the TPC members for all the time and effort they put into reviewing and discussing the papers. We are also thankful

to our general chairs, Petteri Nurmi and Pan Hui, for helping us with organizing the program. We also thank the artifact evaluation chairs, Przemysław Pawełczak and Robert LiKamWa, for organizing an excellent artifact evaluation process. We hope that you enjoy attending the conference and reading the papers in the program.

ACM MobiSys 2023 Technical Program Committee Co-Chairs

Ardalan Amiri Sani
University of California Irvine

Yunxin Liu
Institute for AI Industry Research (AIR), Tsinghua University

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