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MobiSys '21

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The 19th Annual International Conference on
Mobile Systems, Applications, and Services

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**Association for
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Advancing Computing as a Science & Profession

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MobiSys 2021

Welcome Message from the General Chair

The years 2020 and 2021 are not going to be like any others in the lifetimes of many of us. We live in challenging times where a global pandemic has upended our way of living, doing business, socializing, and in our case, doing research and sharing results. For the past many decades, conferences with in-person attendance have been the norm for many communities to allow for free-flowing exchange of ideas. The last 18 months have put a pause to this, and indeed, has made many of us ponder about what is critical and what is not. It is in this poignant context, I welcome you all to the 19th ACM International Conference on Mobile Systems, Applications, and Services (ACM MobiSys 2021).

Our website indicates that the conference is being held in the Planet Mars of our solar system --- for readers who might be browsing this note many decades after the conference is completed, we note that human travel to distant planets is not yet practical in 2021, and so for all attendees who could not travel to Mars (i.e., all the attendees), we provided the ability to join remotely, from the comforts of their own homes, offices, or other convenient locations. Maybe one day this conference, like many others, may indeed be located in Mars with in-person attendance. Humans have always persevered through difficult times and have come out stronger, and it seems right to dream big, especially now.

There is a famous saying “Never let a crisis go to waste”. It is an opportunity to try different things that are unthinkable in normal times. In modest ways, in ACM MobiSys 2021 we are experimenting with some new ideas. A big focus of this year’s conference is on student mentorship. Our student mentorship chairs (Ana Aguiar and Aruna Balasubramanian) have put in significant efforts to recruit students from diverse backgrounds, including first-timers in this conference, and have paired them with mentors to allow them to better navigate the conference. I am sure all of us can relate to our first-ever conference and being a little unsure of whether we belong. We hope strong student mentorship will be a key part of future conferences and provide a soft landing for first-timers in these events.

While virtual events limit engaging voice-based conversations, it has some positive side effects. It allows individuals, who maybe less confident to come up to a microphone to ask the speaker a question, to post their questions in the associated Slack channel. More interestingly, it allows hundreds of participants from many other countries across the globe to join in the conference, who normally cannot due to costs, travel difficulties, and more. It allows our conference to be truly global. To make the online experience as good as can be,

the virtual arrangements chairs (Ashwin Ashok, Qin Lv, and Shijia Pan) are working very hard to enable greater interactions in the community, and we hope everyone who participates find the experience engaging. At the same time, the community engagement chairs (Rajalakshmi Nanadakumar and Vaishnavi Ranganathan) have also been deeply involved in getting the strong MobiSys community to engage in the days leading up to the conference and with other plans during the actual event.

Another benefit of the online structure is that we were very open-minded about workshops. We accepted almost all the workshops, as there are no strict space constraints in Mars (yet) or in the virtual space where we are congregating. We hope each nascent community will find their own interactions to be enriching and will be able to launch strong research agenda through their event. Our workshops chair (Diego Perino) worked tirelessly to ensure the best possible coverage across ideas and topics.

Three events worthy of additional mention are the IoT Day, being led by Nic Lane and Anna Maria Mandalari, the Students in ACM MobiSys workshop, being organized entirely by students, (Hadi Amirpour, Hannaneh Barahouei Pasandi, and Mallesham Dasari), and the posters and demonstration sessions, coordinated by Ozgu Alay and Bhuvana Krishnaswamy. These events are likely to be very interactive, thought-provoking, and social, which sometimes form the heart of the conference.

Last, but definitely not least, the program includes multiple engaging keynotes and invited talks from leading luminaries of the broad computing discipline and panels that discuss and challenge us to debate on important technical, and partly social, topics. We hope these interest and inspire all of you.

Complementing these highly visible activities are other critical tasks that form the backbone of organizing a conference. This includes efforts in managing finances (Massimo Gallo), seeking sponsorship (Ardalan Amiri Sani, Wenjun Hu, Youngki Lee, and Tam Vu), conducting publicity (Kleomenis Katevas and Yuuki Nishiyama), handling conference registration (Mariya Zheleva), publications (Shubham Jain), organizing video materials (Siddarth Rupavatharam), and continuously updating the conference website (Charles Carver and Kasthuri Jayarajah).

Last, but not least, I want to recognize the hard work of the program chairs (Luca Mottola and Xia Zhou) the entire technical program committee for assembling a high-quality program, and all authors who submitted papers to the conference.

Finally, I want to thank each of the conference participants, and I hope to get a chance to meet you virtually during the event. I invite you all to join in this annual event, a celebration of the best of our community, to learn and engage with each other. Onwards and upwards!

Suman Banerjee

University of Wisconsin-Madison

MobiSys 2021

Welcome Message from the Program Chairs

It is our great pleasure to welcome you to the 19th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys 2021), the leading venue for research on the design, implementation, use, and evaluation of mobile computing and wireless systems, applications, and services. ACM MobiSys has established itself as the SigMobile flagship venue to address research challenges in the design, implementation, and deployment of mobile computing systems.

The paper review process this year was highly selective. Out of 166 high quality submissions, 36 were finally accepted for publication and presentation, yielding an acceptance rate around 22%. Submitted papers underwent a rigorous multistage review process. First, all submissions were checked for compliance and for general quality and topic match. Those not meeting conference criteria were administratively rejected without review. Papers passing this stage were assigned three reviews in the first stage of the process. At the conclusion of the first review round, 82 papers were rejected based on the first assessment. The rest were assigned from two to four additional reviews. An online discussion phase then ensued, resulting in recommending 59 papers for discussion at the PC meeting.

The PC meeting was held virtually, owing to the global pandemic. The effort was massive and we thank PC members for their commitment to the conference, which showed clearly in the case of the PC meeting. A total of 61 people across 16 different time zones participated, all the way from GMT-11 to GMT+11. The PC members managed to be online for several hours despite personal constraints and time zone differences, working around vaccination appointments, screaming babies, sons and daughters stuck at home, and pets trying to join the meeting as well. Finally, 36 papers were conditionally accepted.

Each of the conditionally-accepted papers was assigned a shepherd to help ensure that the authors produce a final manuscript that satisfactorily addresses reviewer comments. The shepherding process unfolded in an anonymous fashion, similar to the review process. All shepherded papers were ultimately accepted. The resulting program covers an exciting set of topics ranging from space IoT to the use of new materials for mobile sensing. We truly believe that the diversity and quality of these papers accurately reflect the vibrant MobiSys community and cutting-edge research in mobile computing systems.

To honor the system nature of ACM MobiSys, this year we integrated an artifact evaluation program in the review process. Submissions could opt in for such a program by expressly

indicating that at the time of submitting the paper. By doing so, if the paper was eventually accepted, the authors were committed to providing implementations, models, test suites, benchmarks, and data used to derive the results presented in the paper to the artifact evaluation committee. This was formed by a subset of PC members who volunteered for this job. A total of 12 papers have ultimately applied for the program. The artifact evaluation committee examined the provided artifacts and validated authors' requests of one or more "Artifact Evaluated" badges available as part of the corresponding ACM initiative.

Putting together the program of ACM MobiSys 2021 was a team effort. We would like to express our deepest gratitude to Suman Banerjee, the General Chair, for organizing the team. We would also like to thank the authors for providing stellar contributions. We would like to express special thanks to the PC members, who worked very hard in reviewing papers, guiding papers through the shepherding process, and evaluating artifacts. We would also like to thank ACM, SIGMOBILE and the other members of the organizing committee for all the arrangements that made it possible to bring this program to the attendees. Last but not least, we would like to thank the attendees for your patronage of the conference and for making it a successful meeting place for multiple communities and a catalyst for discussions and creative exchange.

We hope that you will find this program interesting and thought-provoking and that the conference will provide you with a valuable opportunity to share ideas with other researchers and practitioners from institutions around the world.

Luca Mottola
Politecnico di Milano

Xia Zhou
Dartmouth College

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