November 4–7, 2018
Shenzhen, China

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SenSys '18

Proceedings of the 16th

Conference on Embedded Networked Sensor Systems

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ISBN: 978-1-4503-5952-8

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Message from General Chair

Welcome to the 16th ACM Conference on Embedded Networked Sensor Systems (SENSYS 2018) and welcome to Shenzhen China! We invite you to enjoy hearing the in-depth research and discussions with fellow attendees. This year we hope you will like the effort we put into the program to bring multiple communities together.

This is the first time SenSys has come to China, and Shenzhen has led the way in its development. Starting from a sleepy fishing village to the mega city of today, Shenzhen is often dubbed the âĂIJelectronics capital of the worldâĂİ and is home to the growing focus of Internet of Things in China. ShenzhenâĂŹs growth has mirrored the growth of our research community. The program reflects our effort to facilitate the coming together of attendees and local industry. As part of this effort, we have planned the factory tour, local company involvement, and fascinating keynotes.

This year we have two keynotes that bridge industry and research efforts. On Monday, Sean Ding, CTO and AI/IoT Scientist of Alibaba CloudâĂŹs IoT starts off the conference. On Wednesday, Feng Zhao, CTO and vice president of Haier will speak as the Joint keynote with Buildsys. These keynotes will provide insights from their respective efforts and unique perspectives.

Continuing the tradition of a highly selective program at SenSys, we have put together a wonderful program to foster exchange of ideas. As with past years, the Buildsys conference is co-located and will start on Wednesday with its 2-day program. This year, together with Buildsys we have a joint keynote and a joint poster/demo session that bring together the two communities. SenSys also includes six of workshops that will engage in emerging works and areas.

Organizing Sensys has been smooth due to the tremendous efforts of the organizing committee. We would like to thank the program co-chairs Nic Lan and Tian He for organizing the paper review process and the stellar program that you will enjoy. We would also like to thank the workshop chairs Rasit Eskicioglu and Yong Li for getting such an active set of workshops together. A big thank you to Hae Young Noh, Pengyu Zhang, and Olga Saukh for putting together a diverse set of demos and posters. Many thanks to Yuhan Dong and Polly Huang for helping the future colleagues at the Ph.D. Forum. Thanks to Xinlei Chen, Shijia Pan, and Weixi Gu for connecting the community through the website and many forms of publicity. Many thanks to the efforts of the finance chairs Jorge Ortiz and Yuchun Wu and corporate sponsorship chair Nairan Zhang for securing sponsorships and keeping us in line for the spending. Thanks to the publication chairs Gowri Sankar Ramachandran and Bhaskar Krishnamachari for their momentous efforts and eye for detail to ensure top quality proceedings. Especially thank Singapore Management University and the Social Media Chair Tian Zhou for their efforts in making the SenSys app a reality. Thanks to Tam Vu for ensuring the student travel grant was available for students. Finally, a big thank you to Manman Duan, Jin Zhang and Kai Zhang for organizing student volunteers, and ensuring all aspects of local logistics to run smoothly.

SenSys is made possible every year by the sponsorship of ACM Special Interest Groups (SIGs): SIGCOMM, SIGMOBILE, SIGARCH, SIGOPS, SIGMETRICS and SIGBED. The National Science Foundation (NSF) provided a number of travel awards, making it possible for many students to attend the conference. We also acknowledge the financial and logistical support from China Building New Material Research Institute, Daxing United Space, HuaWei LiteOS, IoTeX, South University of Science and Technology of China, and Tsinghua Berkeley Shenzhen Institute.

On behalf of the entire organizing committee, we wish you enjoy the conference!

Lin Zhang
Pei Zhang

Message from Technical Programme Chair

It is with great pleasure we welcome you to the technical program of Sensys 2018, the 16th ACM International Conference on Embedded Networked Sensor Systems. SenSys is the flagship single-track academic venue for the study of the core systems challenges faced by a diverse range of self-contained and networked sensors and sensor-enabled systems. The conference is recognized as being at the frontier of addressing high-impact open research problems presented by the design, development, deployment, use – and even the fundamental limits – of sensing systems and technology. In this proceedings, you will discover an inspiring program that features not only exceptionally high quality research papers in the tradition of prior SenSys conferences, but also a rich breadth in the topics that they cover. In 2018, SenSys has successfully expanded its research horizon from well-established areas such as networking protocols, conventional sensing systems, and critical sensor services (including localization, synchronization, reprogramming) to new emerging frontiers such as artificial intelligence-driven IOT design, cross-technology issues, battery-free designs, and human-in-the-loop sensing.

The paper review process this year was very rigorous and highly selective. In total four rounds of decisions were necessary. All papers were reviewed double-blind, preserving both author and reviewer anonymity. In the first round, 147 submissions were assigned to 3 4 TPC members. 81 submissions, that had at least one supportive TPC members, were advanced to the second round. In the second round, we assign each paper 3 4 additional reviewers, for a total of 5 7 reviews. Online discussion among the TPC members was utilized to advance 45 submissions into the third round. The decision of the third round was made with a physical face-to-face TPC meeting where the strengths and weaknesses of each of the 45 papers were deliberated and debated in great detail by the full TPC. A total of 23 submissions were conditionally accepted with shepherds assigned. Ultimately, all of thes 23 papers were accepted into the program after the anonymous shepherd ensured the authors sufficiently addressed all concerns raised during the TPC meeting. This process yielded an acceptance rate of around 15.6

Clearly the creation of this technical program has been the outcome of a great team effort! We would like to thank the 51 TPC members who worked diligently to accommodate the rounds of deadlines, providing valuable suggestion and reviews to all the submitted papers. We would like to also thank shepherds who work patiently with the authors to further improve the quality of final versions. Finally, we would also like to thank authors for contributing such a set of cutting-edge works to SenSy this year, and for working hard to address the comments. With all these efforts, we now have an exciting and diverse program. We would like to thank the support from conference organizers, in particular, general chairs Pei Zhang and Lin Zhang for arranging and diligently monitoring key logistical issues. We also would like to thank the coordination provided by the BuildSys organizers Rajesh Gupta (general chair) and Polly Huang (program chair) so that we can have a joint session for demo and posters. Last but not least, we would like to thank the attendees of this conference for your involvement in this diverse community, sharing ideas with others, and providing valuable feedback for improvements. We hope you will find the technical program thought-provoking and stimulating, we sincerely wish you enjoy the conference!

Tian He, University of Minnesota
Nic Lane, University of Oxford

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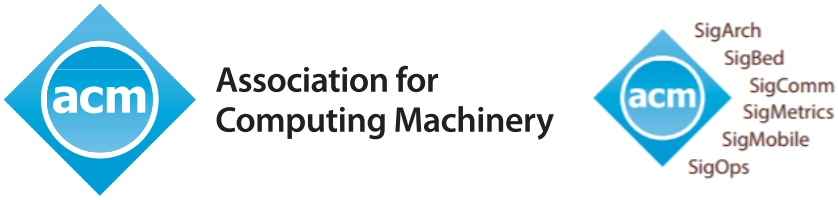

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