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SenSys'17

Proceedings of the

15th ACM Conference on Embedded Networked Sensor Systems

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Proceedings of the 15th ACM Conference on

Embedded Networked Sensor Systems

Edited by
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Association for
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Message from the General Chair

It is my great pleasure to welcome you to Delft University of Technology. We are delighted to host the 15th ACM Conference on Embedded Networked Sensor Systems (SENSYS 2017). The main conference is starting off with a day packed with a diverse set of workshops covering hot topics like energy-neutral systems, mobile-crowd and human-centered sensing, safety, and security; a hands-on tutorial on the Tock operating system; and a Doctoral Colloquium. The SenSys conference itself includes regular papers, posters, demos, the F1/10 lunch tutorial, and a new-directions panel providing ample food for discussion about the state-of-the-art and future research directions in our community. As has become a tradition over the last few years, the BuildSys conference will start on the Wednesday and run its own two-day program. New to this year's edition of SenSys is the accompanying IDEA-League Doctoral School on Transiently-Powered Computing, exemplifying the exciting times we are living in with new topics branching off ever faster.

Organizing SenSys has been a smooth ride thanks to the help of the many co-organizers involved over the last six months. I would like to thank the program co-chairs Luca Mottola and Niki Trigoni for taking care of the paper review process; Xiaofan (Fred) Jiang for managing the record number of workshops; Marco Zuniga and Andrew Markham for overseeing the selection of the posters and demos; Marco Cattani for organizing the doctoral colloquium; our publication chair Rasit Eskicioglu with his fine eye for detail and drive for perfection for pulling together the proceedings; Omprakash Gnawali and Marco Cattani for taking care of the student travel grants; the publicity chairs Brad Campbell, Carlo Alberto Boano, and Polly Huang for sending out announcements on short notice; Vijay Rao for managing the website and local IT services; and Lin Zhang and Jorge Ortiz for securing the sponsorships from industry. Special thanks go to Fernando Kuipers, the finance chair, who took care of the registration process with all its special requests and exceptions taking way more time than anticipated, Paula Diks for the local arrangements, and Delft University for hosting the events free of charge on their premises. Finally I would like to thank Johnson Control, IBM Research, and the ACM for their financial and organizational support.

On behalf of the entire organizing committee I wish you an enjoyable and inspiring conference.

Koen Langendoen
SenSys'17 General Chair

Message from Program Chairs

It is our great pleasure to welcome you to the 15th ACM Conference on Embedded Networked Sensor Systems (SenSys 2017), a leading venue for exchange of ideas in a range of topics, from innovative network and energy management protocols to signal processing and analytics for smart sensing applications. ACM SenSys attracts a diverse set of attendees from both academia and industry, and is an ideal venue to address research challenges facing the design, development, deployment, use, and fundamental limits of intelligent sensor systems.

The paper review process this year was highly selective. Out of 152 high quality submissions, only 26 were accepted for publication and presentation as full papers, yielding an acceptance rate around 17.1%. For the first time in the history of SenSys, we organized the program committee (PC) in a two-level structure. The Main PC reflected the traditional SenSys PC in terms of seniority and expertise. The External PC was purposely assembled to include promising junior researchers in the field, to help them feel integral part of the SenSys community and train them for future participation to the Main PC, as well as experts in specific emerging topics.

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 surviving this stage were assigned three reviews in the first stage of the process, involving both Main and External PC. At the conclusion of this stage, 82 papers were rejected based on low scores from the first round of reviews. The rest were assigned three additional reviews only by members of the Main PC, thus totalling 6 reviews per paper. An online discussion phase then ensued, resulting in recommending 44 papers for discussion at the in-person physical PC meeting.

Because of the multi-level organization of the PC, compared to past editions of the conference, definitely more PC members were able to discuss the same paper at the meeting, resulting in very fruitful, deep, and sometimes heated discussions. At the conclusion of the meeting, a total of 26 papers were recommended for acceptance to the conference. All recommended papers were assigned shepherds to help ensure that the authors produce a final manuscript that satisfactorily addresses reviewer comments. All shepherded papers were ultimately accepted to the conference.

The program this year covers an exciting set of topics including networking, communication media, energy management, inference and learning, localization, and human sensing applications, including healthcare and smart buildings. In addition to regular papers on the topics above, we solicited this year new directions papers discussing the future of sensor enabled computer systems. New direction papers discuss current or foreseeable technologies that are likely to hold the highest potential in the next five years. We received a total of 16 new directions paper submissions. These were reviewed by the Steering Committee and 4 out of 16 papers were accepted, yielding an acceptance rate of 25%. Authors of accepted papers will join the PC chairs in a panel discussion during the conference.

Besides regular and new directions papers, the program also includes a poster/demo session, and a distinguished speaker: Professor Roger Wattenhofer from ETH Zurich, who will be giving a keynote entitled “Is there any practical theory?”.

Putting together the program of SenSys 2017 was a team effort. We would like to express our deepest gratitude to Prof. Koen Langendoen, 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 and providing suggestions for their improvement. We would also like to thank ACM and the other members of the organizing committee for all the logistical 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
Politechnico di Milano

Niki Trigoni
University of Oxford

SenSys 2017 Organization

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