SenSys'14

Proceedings of the 12th ACM Conference on

Embedded Networked Sensor Systems

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Message from the General Chair

Welcome to the 12th ACM Conference on Embedded Networked Sensor Systems (SenSys 2014) held in Memphis, Tennessee, USA! SenSys is the premiere conference at the intersection of distributed sensing, wireless networking and embedded systems. It is a highly selective, single track conference that has consistently produced greatly influential papers. To celebrate the success of SenSys after a dozen years, we are introducing something new this year: multiple "Test of Time" awards will be announced on the second day.

The Technical Program Committee chaired by Prabal Dutta and Chenyang Lu assembled a great program. The conference will kick off with a keynote by Professor Hari Balakrishnan from MIT. It will be followed by presentations covering 21 research papers, 15 posters and 13 demonstrations as well as a panel discussion. The TPC Chairs were assisted by the Demo Chairs, Kay Römer and Péter Völgyesi and Poster Chair, Octav Chipara. We gratefully acknowledge their excellent work.

BuildSys has been the most successful co-located workshop of SenSys. It has been great to see it grow the last few years and become a full-fledged conference this year. The 1st ACM International Conference on Embedded Systems for Energy-Efficient Buildings (BuildSys 2014) will start on the last day of SenSys. To highlight the synergies between the two communities, Dr. Clas A. Jacobson, Chief Scientist, United Technologies Systems & Controls Engineering, will give a joint keynote on November 5th.

Two workshops, selected by David Boyle, the 2nd International Workshop on Energy Neutral Sensing Systems (ENSsys) and the 1st Workshop on Mobile Medical Applications organized by Geoff V. Merrett and Sandeep K.S. Gupta, respectively, explore hot areas related to SenSys. The Doctoral Colloquium brought together by Luca Mottola and Anthony Rowe will provide an excellent forum for Ph.D. students to get feedback on their research topics from a panel of experts. We thank the chairs and the mentors for volunteering their time. The regular N^2Women event was organized by Meghan Clark this year.

Organizing a conference is more complicated than most people realize. First and foremost, we need to thank Timothy Hnat for the superb job he did with local arrangements. Having a remote general chair meant a lot of extra work for him. We also owe a great deal of gratitude to all other members of the Organizing Committee: Rasit Eskicioglu created the proceedings for both conferences and both workshops, Omprakash Gnawali handled the finances, Santosh Kumar found sponsors, Radu Stoleru secured NSF travel support, Branislav Kusy publicized the event, Robert Dickerson handled the website and the outreach on social media, Vernisa W. Hazlett helped with registrations. We also thank the student volunteers for their work. The SenSys Steering Committee, led by Jie Liu, was always there to help when the need arose.

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 support of Microsoft Research, the Institute for Software Integrated Systems (ISIS) at Vanderbilt University and the Center of Excellence for Mobile Sensor Data-to-Knowledge (MD2K) at University of Memphis.

Ákos Lédeczi
SenSys'14 General Chair

Message from the Program Co-Chairs

It is with great pleasure that we welcome you to ACM SenSys 2014, The 12th ACM Conference on Embedded Networked Sensor Systems, a highly selective, single-track forum for research on the systems issues of networked sensing and actuation. This year, we have a strong and diverse technical program that covers both established areas and emerging directions in sensing systems. This year's papers span a wide range of topics in sensing systems, including energy harvesting and management, localization and tracking, wireless communication, mobile and crowd sensing, security and privacy, applications to vehicles and pollution monitoring, and many more.

We are thrilled to kick off the technical program with a keynote by Professor Hari Balakrishnan from MIT, who will discuss how his work at Cambridge Mobile Telematics came out of academic research published at SenSys and closely related academic conferences, and the importance of SenSys to practice.

After the keynote, we have an exciting program that includes 21 full-length technical papers, selected by the technical program committee (TPC) from the 117 submissions received. The TPC selected the papers for the technical program using a rigorous multi-round review process. In the first round, all submissions were reviewed by 3–4 TPC members and most papers with at least one expert recommending acceptance were advanced to the second round, in which each submission was reviewed by 2-3 additional reviewers for a total of 5–7 reviews for each paper. At the end of the second round, the reviewers for each paper conferred to decide whether a paper would advance to the third round of discussion at the program committee meeting. This final round took place during an all-day, face-to-face meeting held at the University of Michigan, during which each of the 47 papers chosen for face-to-face discussion was discussed by the entire TPC. After the decisions, each of the 22 conditionally accepted papers was shepherded by a TPC member to ensure that the final manuscript met the standards of the committee. To ensure an effective process, and conditionally accept papers that might otherwise have been rejected, the program co-chairs introduced a double-blind shepherding procedure this year. This new process ensured that the major issues raised by the TPC were addressed in the final manuscripts. One paper was withdrawn during shepherding review but the 21 other conditionally accepted papers were selected for publication, leading to a strong and exciting program.

Many people played a role in ensuring a successful TPC meeting. In particular, we would like to thank Laura Fink who administered the HotCRP conference review system, Lauri Johnson who organized local arrangements for the TPC meeting, and graduate students Meghan Clark, Branden Ghena, William Huang, Noah Klugman, and Pat Pannuto who provided logistical and technical support.

Another milestone—new this year—is the colocation of SenSys with the inaugural year of BuildSys as an ACM conference. BuildSys has been a very successful workshop associated with SenSys over the past few years, and this year BuildSys has been expanded into a conference. To facilitate the synergy between SenSys and BuildSys, the final day of the SenSys program begins with a joint BuildSys-SenSys keynote by Dr. Clas A. Jacobson, Chief Scientist, United Technologies Systems & Controls Engineering.

Creating the technical program for SenSys 2014 was a team effort and we would like to thank the TPC members, external reviewers, and shepherds who worked very hard to review and discuss the submissions, and provide improvement suggestions to the authors. We would also like to thank the authors for providing exceptional contributions and the contact authors of accepted papers for their extra efforts during the double-blind shepherding process. We are also grateful to our colleagues who helped organize the program, including Jie Liu (Steering Committee Chair), Octav Chipara (Poster Chair), Kay Römer and Péter Völgyesi (Demo Chairs), Rasit Eskicioglu (Publication Chair), David Boyle (Workshop Chair) and Geoff V. Merrett and Sandeep K.S. Gupta (Workshop Organizers), Meghan Clark (N^2Women Organizer), Luca Mottola and Anthony Rowe (Doctoral Colloquium Chairs), and the rest of the organizing committee. We would especially like to thank Ákos Lédeczi (General Chair) and Timothy Hnat (Local Arrangements Chair). Their handling of the conference logistics was invaluable.

We hope you will find the technical program exciting and thought provoking, and that the conference will provide you with a valuable opportunity to share ideas with others from around the world.

Prabal Dutta and Chenyang Lu
SenSys'14 Program Co-Chairs

Table of Contents

Session 4: Security, Privacy and Drones

Session 5: Achieving Context Awareness

Session 6: Sensor Applications

Session 7: Monitoring and Imaging, Indoors and Out

Demos and Posters

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