
2nd ACM International Workshop on Mobile Systems for Computational Social Science

Nicholas D. Lane
Microsoft Research Asia
China
niclane@microsoft.com

Mirco Musolesi
School of Computer Science
University of Birmingham
United Kingdom
m.musolesi@cs.bham.ac.uk

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from permissions@acm.org.

UbiComp'13 Adjunct, September 8–12, 2013, Zurich, Switzerland.
Copyright © 2013 ACM 978-1-4503-2215-7/13/09...\$15.00.

<http://dx.doi.org/10.1145/2494091.2497348>

Author Keywords

Mobile Systems, Computational Social Science, Ubiquitous Computing, Pervasive Computing, Mobile Phones, Mobile Sensing, Sensors

ACM Classification Keywords

J.4 [Social and Behavioral Sciences]: Computational Social Science

General Terms

Algorithms, Experimentation, Human Factors

Scope of the Workshop

For decades, behavioral and social scientists have strived to understand the complex combination of factors that influence the decisions, activities and interactions of people in everyday life. Through conventional approaches, such as self-reports and controlled laboratory studies, considerable progress has been made. However, these methods have fundamental limitations in their ability to unobtrusively collect fine-grain behavioral data in natural settings. Recent advances in mobile sensing technology are promising to overcome these obstacles by delivering radically different tools for in-situ human behavior monitoring able to operate at much larger scales than previously thought possible.

Today, mobile sensing platforms primarily, mobile phones are causing behavioral and social scientists to completely rethink how they study people in real-world environments. A variety of factors have combined to put mobile phones in this position. First, mobile phones are ubiquitous: there are billions of mobile phone users and the market continues to grow worldwide. Second, mobile phones are unobtrusive: due to their ubiquity, users are not consciously aware of the presence of mobile phones, unlike purpose-built devices that depend on user self-reports. Third, mobile phones are powerful and sensor rich platforms: today's phones have many embedded sensors (e.g., accelerometer, Bluetooth, GPS, and magnetometer) that can accurately capture user behavior; they are also equipped with powerful processors, which allow applications to exploit computationally intensive algorithms to run locally on the phones. Finally, due to their proliferation, mobile phones systems can scale: experiments based on mobile applications can potentially reach millions of people. Before we can fully leverage the potential of mobile phone sensing systems, a variety of open problems must be addressed. For example, because mobile phones are energy constrained, efficient algorithms able to make accurate behavioral inferences from sensor data (with cloud resources exploited when needed) must be developed. Similarly, fundamental challenges remain in the management of personal data and the understanding of real-time processing of sensor workloads. If these technical challenges can be overcome mobile systems will represent a key building block for the emerging discipline of computational social science.

The goal of this one-day workshop is to bring together researchers either active, or interested, in mobile systems for social analysis and applications. We anticipate a lively forum to discuss recent advances in the design,

implementation and evaluation of this new class of mobile systems. The workshop will be open to contributions from researchers from various domains who tackle these challenging research problems using their own unique perspective. The aim is to discuss the many open issues in this area towards identifying novel solutions to be investigated in addition to fostering collaborations among the workshop participants. We will especially welcome highly innovative and/or controversial contributions, debunking or confirming existing system design methodology, for example by means of new experimental results.

We will invite to submit papers in the following areas:

- Design, implementation and evaluation of mobile systems for computational social science;
- Experiment design of social and behavioural experiments using mobile technologies;
- Design and implementation of algorithms for mobile system applications;
- Architectural issues, including middleware and operating systems support for social applications;
- Integration of mobile technologies and cloud computing for social applications;
- Energy efficiency issues in designing socially-aware mobile systems;
- Mobile social sensing systems;
- Implementation of mobile technologies for psychological and health interventions;

- Integration of mobile and Web technologies for behavioral intervention;
- Deployment and testing of mobile systems for social analysis and applications;
- Data collection, anonymization and storage of social and behavioral data collected by means of mobile systems;
- Privacy issues related to the design of socially-aware systems.

This is will be the second edition of this unique interdisciplinary workshop completely focused on the design of mobile systems for social analysis and applications. The first edition of the workshop colocate with ACM MobiSys'12 saw the participation of more than 40 researchers from academia and industry. We decided to move the workshop to ACM UbiComp'13, because it is a more natural venue for this workshop in our opinion. Also this year we expect great interest not only from the several researchers already actively working in this area from various communities, including computer science, engineering, psychology and sociology, but from practitioners in industry and the mobile systems community as a whole.

Participant Selection and Workshop Structure

Success of the workshop will depend on the interaction between researchers with computing and social sciences backgrounds. We will encourage the discussion and the interactions among the participants also by means of a panel about open issues in designing mobile systems for social applications at the end of the workshop. We will also welcome contributions from industry. The call for

papers that will be published will invite submissions of high impact position papers or works containing preliminary research results. Demonstrations of the proposed papers will also be strongly encouraged.

The workshop program committee will include the following members:

Programme Committee

- Andrew T. Campbell (Department of Computer Science, Dartmouth College, USA)
- Tanzeem Choudhury (Information Science, Cornell University, USA)
- David Coyle (Department of Computer Science, University of Bristol, UK)
- Tamlin Conner (Department of Psychology, University of Otago, New Zealand)
- Daniel Gatica-Perez (IDIAP, Switzerland)
- Samuel Gosling (Department of Psychology, University of Texas at Austin, USA)
- Inseok Hwang (Centre for Mobile Software Platform, KAIST, South Korea)
- Neal Lathia (Computer Laboratory, University of Cambridge, UK)
- Mikkel Baun Kjrgaard (Department of Computer Science, Aarhus University, Denmark)
- Cecilia Mascolo (Computer Laboratory, University of Cambridge, UK)

- Matthias R. Mehl (Department of Psychology, University of Arizona, USA)
- Emiliano Miluzzo (AT&T Labs, USA)
- Petteri Nurmi (Helsinki Institute for Information Technology, Finland)
- Thomas Phan (Samsung R&D Center, USA)
- Veljko Pejovic (School of Computer Science, University of Birmingham, UK)
- Peter Jason Rentfrow (School of Psychology, University of Cambridge, UK)
- Mark Weal (School of Electronics and Computer Science, University of Southampton, UK)
- Cornelia Wrzus (Max Planck Institute for Human Development, Germany)
- Lucy Yardley (School of Psychology, University of Southampton)

Important Dates Submission deadline May 30, 2013, 23:59 PST

Notification date: June 14, 2013

Camera ready due: June 21, 2013

1-day workshop: September 9, 2013

Biographies of the Workshop Organizers

Dr. Nicholas Lane is a Researcher in the Mobile and Sensing Systems group at Microsoft Research Asia. Before joining Microsoft he received his Ph.D. at Dartmouth College where he was co-advised by Andrew

T. Campbell and Tanzeem Choudhury. His research interests revolve around people-centric sensing applications and systems. He is an experimentalist who likes to build prototype mobile sensing systems based on well-founded computational models. More information about his research profile can be found at the following URL: <http://niclane.org/>

Dr. Mirco Musolesi is a Senior Lecturer at the School of Computer Science, University of Birmingham, United Kingdom. He received a PhD in Computer Science from University College London in 2007 and a Master in Electronic Engineering from the University of Bologna in 2002. From October 2005 to August 2007 he was a Research Fellow at the Department of Computer Science, University College London. Then, from September 2007 to August 2008 he was an Institute for Security, Technology and Society Fellow at Dartmouth College, NH, USA, and from September 2008 to October 2009 a Postdoctoral Research Associate at the Computer Laboratory, University of Cambridge. Before joining Birmingham, he was a Lecturer at the University of St Andrews. His research interests lie in the broad areas of social and mobile systems with a current focus on social computing, intelligent mobile systems and network science (in particular social network analysis). More information about his research profile can be found at the following URL: <http://www.cs.bham.ac.uk/~musolesm>.

Call for Papers

For decades, behavioral and social scientists have strived to understand the complex combination of factors that influence the decisions, activities and interactions of people in everyday life. Through conventional approaches, such as self-reports and controlled laboratory studies, considerable progress has been made. However, these

methods have fundamental limitations in their ability to unobtrusively collect fine-grain behavioral data in natural settings. Recent advances in mobile sensing technology are promising to overcome these obstacles by delivering radically different tools for in-situ human behavior monitoring able to operate at much larger scales than previously thought possible.

Today, mobile sensing platforms primarily, mobile phones are causing behavioral and social scientists to completely rethink how they study people in real-world environments. A variety of factors have combined to put mobile phones in this position. First, mobile phones are ubiquitous: there are billions of mobile phone users and the market continues to grow worldwide. Second, mobile phones are unobtrusive: due to their ubiquity, users are not consciously aware of the presence of mobile phones, unlike purpose-built devices that depend on user self-reports. Third, mobile phones are powerful and sensor rich platforms: today's phones have many embedded sensors (e.g., accelerometer, Bluetooth, GPS, and magnetometer) that can accurately capture user behavior; they are also equipped with powerful processors, which allow applications to exploit computationally intensive algorithms to run locally on the phones. Finally, due to their proliferation, mobile phone systems can scale: experiments based on mobile applications can potentially reach millions of people. Before we can fully leverage the potential of mobile phone sensing systems, a variety of open problems must be addressed. For example, because mobile phones are energy constrained, efficient algorithms able to make accurate behavioral inferences from sensor data (with cloud resources exploited when needed) must be developed. Similarly, fundamental challenges remain in the management of personal data and the understanding of real-time processing of sensor workloads. If these

technical challenges can be overcome mobile systems will represent a key building block for the emerging discipline of computational social science.

The goal of this one-day workshop is to bring together researchers either active, or interested, in mobile systems for social analysis and applications. We anticipate a lively forum to discuss recent advances in the design, implementation and evaluation of this new class of mobile systems. The workshop will be open to contributions from researchers from various domains who tackle these challenging research problems using their own unique perspective. The aim is to discuss the many open issues in this area towards identifying novel solutions to be investigated in addition to fostering collaborations among the workshop participants. We will especially welcome highly innovative and/or controversial contributions, debunking or confirming existing system design methodology, for example by means of new experimental results.

We will invite to submit papers in the following areas:

- Design, implementation and evaluation of mobile systems for computational social science;
- Experiment design of social and behavioural experiments using mobile technologies;
- Design and implementation of algorithms for mobile system applications;
- Architectural issues, including middleware and operating systems support for social applications;
- Integration of mobile technologies and cloud computing for social applications;

- Energy efficiency issues in designing socially-aware mobile systems;
- Mobile social sensing systems;
- Implementation of mobile technologies for psychological and health interventions;
- Integration of mobile and Web technologies for behavioral intervention;
- Deployment and testing of mobile systems for social analysis and applications;
- Data collection, anonymization and storage of social and behavioral data collected by means of mobile systems;
- Privacy issues related to the design of socially-aware systems.

Paper submissions will be limited to 10 pages (10pt ACM SIGCHI archival format). Please note that this is a different format corresponding to 6 pages in the traditional SIG proceedings template used for the main conference. We indeed welcome short papers (such as position papers) of less than 10 pages in length. The proceedings of the workshop will appear in the UbiComp supplemental proceedings and in the ACM Digital Library.

Workshop Chairs

- Nicholas Lane (Microsoft Research Asia, China)
- Mirco Musolesi (University of Birmingham, UK)

Programme Committee

- Andrew T. Campbell (Department of Computer Science, Dartmouth College, USA)
- Tanzeem Choudhury (Information Science, Cornell University, USA)
- David Coyle (Department of Computer Science, University of Bristol, UK)
- Tamlin Conner (Department of Psychology, University of Otago, New Zealand)
- Daniel Gatica-Perez (IDIAP, Switzerland)
- Samuel Gosling (Department of Psychology, University of Texas at Austin, USA)
- Inseok Hwang (Centre for Mobile Software Platform, KAIST, South Korea)
- Neal Lathia (Computer Laboratory, University of Cambridge, UK)
- Mikkel Baun Kjrgaard (Department of Computer Science, Aarhus University, Denmark)
- Cecilia Mascolo (Computer Laboratory, University of Cambridge, UK)
- Matthias R. Mehl (Department of Psychology, University of Arizona, USA)
- Emiliano Miluzzo (AT&T Labs, USA)
- Petteri Nurmi (Helsinki Institute for Information Technology, Finland)
- Thomas Phan (Samsung R&D Center, USA)
- Veljko Pejovic (School of Computer Science, University of Birmingham, UK)

- Peter Jason Rentfrow (School of Psychology, University of Cambridge, UK)
- Mark Weal (School of Electronics and Computer Science, University of Southampton, UK)
- Cornelia Wrzus (Max Planck Institute for Human Development, Germany)
- Lucy Yardley (School of Psychology, University of Southampton)

Workshop Webchair

- Antonio Lima (University of Birmingham, UK)