

ACM HotMobile 2013:  
The 14<sup>th</sup> Workshop on Mobile Computing  
Systems & Applications

Feb 26-27, 2013  
Jekyll Island, Georgia, USA

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# ACM HotMobile 2013

## Program

### Keynote Address: Thad Starner

“Wearable Computing: Through the Looking Glass”

Associate Professor, School of Interactive Computing, Georgia Institute of Technology

### Session 1: Cellular Billing

Chair: Suman Banerjee

- Splitting the Bill for Mobile Data with SIMlets  
*Himanshu Raj, Stefan Saroiu, Alec Wolman, Jitu Padhye (Microsoft Research)*
- Towards Accurate Accounting of Cellular Data for TCP Retransmission  
*Younghwan Go (KAIST), Denis Foo Kune (University of Massachusetts Amherst),  
Shinae Woo, KyoungSoo Park, Yongdae Kim (KAIST)*

### Session 2: Power Management

Chair: Romit Roy Choudhury

- How is Energy Consumed in Smartphone Display Applications?  
*Xiang Chen, Yiran Chen (University of Pittsburgh),  
Zhan Ma, Felix C. A. Fernandes (Samsung Telecommunication America)*
- A2PSM: Audio Assisted Wi-Fi Power Saving Mechanism for Smart Devices  
*Mostafa Uddin, Tamer Nadeem (Old Dominion University)*
- Application Modes: A Narrow Interface for End-User Power Management in Mobile Devices  
*Marcelo Martins, Rodrigo Fonseca (Brown University)*

### Session 3: Understanding humans

Chair: Anthony LaMarca

- The Case for Psychological Computing  
*Xuan Bao, Mahanth Gowda (Duke University),  
Ratul Mahajan (Microsoft Research), Romit Roy Choudhury (Duke University)*
- Recognizing Humans without Face Recognition  
*He Wang, Xuan Bao, Romit Roy Choudhury (Duke University),  
Srihari Nelakuditi (University of South Carolina)*
- sMFCC : Exploiting Sparseness in Speech for Fast Acoustic Feature Extraction on  
Mobile Devices - a Feasibility Study  
*Shahriar Nirjon, Robert F. Dickerson, John A. Stankovic (University of Virginia),  
Guobin Shen (Microsoft Research Asia), Xiaofan Jiang (Intel Labs China)*

## Session 4: Sensors and data

Chair: Rajesh Krishna Balan

- Lowering the barriers to large-scale mobile crowdsensing  
*Yu Xiao (Carnegie Mellon University/Aalto University),  
Pieter Simoens (Carnegie Mellon University/Ghent University -iMinds),  
Padmanabhan Pillai (Intel Labs),  
Kiryong Ha, Mahadev Satyanarayanan (Carnegie Mellon University)*
- Open Data Kit 2.0: Expanding and Refining Information Services for Developing Regions  
*Waylon Brunette, Mitch Sundt, Nicola Dell, Rohit Chaudhri, Nathan Breit,  
Gaetano Borriello (University of Washington)*
- A Framework for Context-Aware Privacy of Sensor Data on Mobile Systems  
*Supriyo Chakraborty, Kasturi Rangan Raghavan, Matthew P. Johnson,  
Mani Srivastava (University of California, Los Angeles)*

## Session 5: Panel: Mobile Systems and the Developing World

Moderator: Gaetano Borriello (University of Washington)

- Panelist: *Elizabeth M. Belding (University of California, Santa Barbara)*
- Panelist: *Lakshmi Subramanian (New York University)*
- Panelist: *Bill Thies (Microsoft Research India)*

## Session 6: Mobile cloud interactions

Chair: Matt Welsh

- Cloud Displays for Mobile Users in a Display Cloud  
*Lars Tiede, John Markus Bjorndalen, Otto J. Anshus (University of Tromso)*
- Towards Synchronization of Live Virtual Machines among Mobile Devices  
*Jeffrey Bickford (AT&T Security Research Center), Ramon Caceres (AT&T Labs - Research)*
- Enabling the Transition to the Mobile Web with WebSieve  
*Michael Butkiewicz, Zhe Wu, Shunan Li, Pavithra Murali,  
Vagelis Hristidis, Harsha V. Madhyastha (UC Riverside),  
Vyas Sekar (Stonybrook University)*

## Session 7: Vehicular networking and transportation

Chair: Lin Zhong

- Scout: An Asymmetric Vehicular Network Design over TV Whitespaces  
*Tan Zhang, Sayandeep Sen, Suman Banerjee (University of Wisconsin Madison)*
- Social Vehicle Navigation: Integrating Shared Driving Experience into Vehicle Navigation  
*Wenjie Sha, Daehan Kwak, Badri Nath, Liviu Iftode (Rutgers University)*
- Quantifying the Potential of Ride-Sharing using Call Description Records  
*Blerim Cici, Athina Markopoulou (University of California, Irvine),  
Enrique Frias-Martinez, Nikolaos Laoutaris (Telefonica Research)*

## Demos

- Designing mobile advertising: User Experience factors for enhancing user adoption  
*Stavros Asimakopoulos (Lancaster University), Frank Spillers (Experience Dynamics), George Boretos (Global Forecasting Solutions), Zhengjie Liu (Dalian Maritime University)*
- NLify: Mobile Spoken Natural Language Interfaces for Everyone  
*Seungyeop Han (University of Washington), Matthai Philipose, Yun-Cheng Ju (Microsoft Research)*
- SocioPhone: Face-to-face Verbal Interaction Monitoring Using Multi-Phone Sensor Fusion  
*Youngki Lee, Chulhong Min, Chanyou Hwang, Jaeung Lee, Inseok Hwang, Chungkuk Yoo, Junehwa Song (KAIST)*
- Focus: A Usable & Effective Approach to OLED Display Power Management  
*Tan Kiat Wee, Tadashi Okoshi, Archan Misra, Rajesh Krishna Balan (Singapore Management University)*
- Mobile ICN Applications for an Event with Large Crowds  
*Anders Lindgren (SICS Swedish ICT), Börje Ohlman, Karl-Åke Persson, Anders Eriksson (Ericsson Research), Petteri Pöyhönen, Janne Tuononen (Nokia-Siemens Networks), Dirk Kutscher (NEC Labs Europe)*
- Preserving Data Privacy Through Data Partitioning in Mobile Application  
*Mohammad Al-Mutawa and Shivakant Mishra (University of Colorado Boulder)*

## Posters

- Bugu: An Application Level Power Profiler and Analyzer for Mobile Devices  
*Youhuizi Li, Hui Chen, Weisong Shi (Wayne State University)*
- Extraction algorithm of relationship between smartphone applications for recommendation  
*Kohei Terazono, Akira Karasudani, Satoshi Iwata, Tatsuro Matsumoto (Fujitsu Laboratories)*
- RazorCam: A Prototyping Environment for Video Communication  
*Michael Mefenza, Franck Yonga, Christophe Bobda (University of Arkansas, Fayetteville)*
- Mobifetch: An Execution-time Prefetching Technique to Expedite Application Launch in Mobile Devices  
*Junhee Ryu, Kwangjin Ko, Heonshik Shin (Seoul National University), Kyungtae Kang (Hanyang University)*
- SickleREMOTE: A Two-Way Mobile Messaging System for Pediatric Sickle Cell Disease  
*Chihwen Cheng (Georgia Institute of Technology), Clark Brown (Emory University), Janani Venugopalan (Georgia Institute of Technology), Todd. Stokes (Georgia Institute of Technology and Emory University), Carlton Dampier (Emory University), May D. Wang (Georgia Institute of Technology and Emory University)*
- Detecting Fake Check-Ins in Location-based Social Networks Through Honey-pot Venues  
*Ke Zhang, Konstantinos Pelechrinis, Prashant Krishnamurthy (University of Pittsburgh)*
- Leveraging Imperfections of Sensors for Fingerprinting Smartphones  
*Sanorita Dey, Nirupam Roy, Wenyuan Xu, Srihari Nelakuditi (University of South Carolina)*
- Participation Management for Mobile Crowdsensing  
*Tingxin Yan, Jing Yang (University of Arkansas)*
- Energy efficient semantic context model for managing privacy on smartphones  
*Prajit Kumar Das, Dibyajyoti Ghosh, Anupam Joshi, Tim Finin (University of Maryland)*
- A Group-based Security Protocol for Machine Type Communication in LTE-Advanced  
*Hyung-Kee Choi, Dae-Sung Choi (Sungkyunkwan University)*
- The Importance of Timing in Mobile Personalization  
*Chad Williams (Central Connecticut State University)*
- Lifestreams Dashboard: an interactive visualization platform for mHealth data exploration  
*Cheng-Kang Hsieh, Hongsuda Tangmunarunkit, Faisal Alquaddoomi, John Jenkins, Jinha Kang, Cameron Ketcham, Brent Longstaff, Joshua Selsky, Dallas Swendeman, Deborah Estrin, Nithya Ramanathan (University of California, Los Angeles)*
- Mitigating Distractions from Smartphones  
*Connor Bain, Sanorita Dey, Srihari Nelakuditi (University of South Carolina), Romit Roy Choudhury (Duke University)*
- Vehicular Inter-Networking via Named Data  
*Giulio Grassi, Davide Pesavento, Lucas Wang, Giovanni Pau (UCLA), Rama Vuyyuru, Ryuji Wakikawa (Toyota ITC), Lixia Zhang (UCLA)*

# Message from the Chairs

ACM HotMobile 2013 marks the fourteenth Workshop on Mobile Computing Systems and Applications. This year, it will be held in Jekyll Island, Georgia – moving to the opposite US coast from our 2012 workshop in La Jolla, CA. ACM HotMobile is a strong, peer-reviewed forum providing insight and debate into ground-breaking areas in mobile computing.

The workshop submission count was slightly lower compared to last year – 54 submissions this year and 68 last year. The program committee accepted 17, resulting in a higher acceptance rate of 31%. We accepted a number of poster and demonstration submissions. We will have several supporting events throughout the workshop to complement our rich technical program of six paper sessions. Our opening keynote is titled “Wearable Computing: Through the Looking Glass” from Thad Starner, a pioneer in the field of wearable computing from GeorgiaTech. We have a panel on “Mobile Systems and the Developing World”, chaired by Gaetano Borriello of University of Washington.

In keeping with our deliberately small workshop theme, we will have a number of opportunities for attendees to engage with each other. At the end of every paper session, the session chair will bring up all the presenters and facilitate a deeper discussion on the topic covered by that session. We will have a poster and demonstration session, allowing PhD students to present and discuss their research with the goal of obtaining early critical feedback from an audience that has a wide perspective on the challenges of mobile computing. We will also have socializing opportunities, including a banquet, an ice cream social, and several breaks.

New this year, we are running a student travel grant program. We received 33 applicants for travel support, which is an astonishingly high number considering that attendance at HotMobile is around 80. We used a number of criteria to pick the 11 awardees, including academic merit, diversity, ability of the advisor or department to fund travel, relevance of student’s work to the workshop, likelihood of student’s impact on SIGMOBILE, and prior volunteer efforts in SIGMOBILE. These students will also have visible volunteer roles at the workshop, including writing a workshop report for ACM MC2R, and helping with the registration desk. Many thanks go to the ACM SIGMOBILE chair, Roy Want, for supporting this experiment and we hope it is a resounding success. Through a combination of generous support from industry and careful venue selection and contract negotiation, we were able to bring early registration fees down to a historical low of \$175 for students and \$290 for ACM professional members.

As always, these events are only successful because of the valuable personal time that volunteers are prepared to give to our research community. We thank the 21 members of our program committee for their dedication in reviewing submissions, and the steering committee for their guidance. We thank all the chairs providing logistical support with publicity, student grants and volunteering, posters and demos, and website updates. Most of all, we thank all the authors that submitted their work to make this a valuable forum for sharing and debating early research results.

Sharad Agarwal, General Chair  
Alexander Varshavsky, Program Chair

Feb 2013

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