WMSC '16: Second Workshop on Mobile and Situated Crowdsourcing

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Abstract

The proposed workshop seeks to build upon the success of previous workshops at UbiComp 2010 and 2011 on Ubiquitous Crowdsourcing, and UbiComp 2015 on Mobile and Situated Crowdsourcing. Increasingly, researchers and practitioners alike are turning towards crowdsourcing with ubiquitous technologies due to their affordances and potential to circumvent limitations with online crowdsourcing platforms. Hence, this workshop's main objectives are to investigate the current state of the art of mobile and situated crowdsourcing, and foster collaborations by bringing together researchers of this thriving research agenda.

Author Keywords

Mobile crowdsourcing; situated crowdsourcing; ubiquitous technologies; mobile phones; public displays; situated technologies.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

Crowdsourcing has been adopted as an umbrella term to refer to the coordinated approach in which a computationally challenging task is broken down into several pieces. Initially, crowdsourcing experiments

were only conducted within the confinement of online platforms, but have since become increasingly popular in settings beyond the desktop in recent years, thus enabling a wide range of applications. While online crowdsourcing markets make it convenient to pay for workers willing to solve a range of different tasks, they can suffer from a number of limitations. For instance, these online platforms do not always attract workers of desired background or skills. Thus, it can be a challenge to recruit workers that speak a specific language or live in a certain city [17].

With this workshop we hope to bring added attention to two forms of ubiquitous crowdsourcing that can help address the limitations of online crowdsourcing: mobile and situated crowdsourcing. Our ultimate goal is to raise awareness within the community to not automatically default to online platforms for their crowdsourcing needs, but instead choose the type of crowdsourcing that better suits their objectives and applications. We also build on previous successful workshops at UbiComp 2010 and 2011 on ubiquitous crowdsourcing lead by one of the organisers of this workshop proposal [19,20], and the first edition of this workshop at UbiComp 2015 organised by all the same researchers [7]. Further, as a result of last year's workshop, the organisers are currently co-guest editing a Special Issue on the same topic in the International Journal of Human-Computers Studies.

Mobile Crowdsourcing

A big advantage of mobile crowdsourcing is that many people almost always have their mobile devices with them, which enables researchers to reach users, anywhere and anytime [2,9,20]. Information gathered in this fashion can then be aggregated and presented in

a useful way to other people (e.g. traffic information [21], airport information [3]). Furthermore, they are more readily accessible to people in developing countries that might not have access to computers and the Internet enabling them to participate in crowdsourcing efforts [12]. Advances in mobile phone technology has also enable for more intricate tasks to be pushed to potential workers. Alt et al. [1] and Väätäjä et al. [21] explore location-based crowdsourcing for distributing tasks to workers enabled by Internet and GPS capabilities of smartphones. In these experiments, workers could help each other providing textual information, pictures or videos regarding a specific restaurant, the weather or local events. mCrowd [22] enables mobile users to utilise sensors on their smartphone to participate and accomplish crowdsourcing tasks including geolocation-aware image collection, image tagging, road traffic monitoring, and others. Previous work has also highlighted how mobile crowdsourcing can solve some of the limitations of online crowdsourcing due the affordances of mobile devices [8].

Situated Crowdsourcing

Situated crowdsourcing is relatively under-explored when compared to online and mobile crowdsourcing due to its novelty. One such example of leveraging situated technologies for crowdsourcing purposes was *Umati* [13]. *Umati* used a vending machine with a touch display for locally relevant tasks and gave out snacks as rewards upon task completion. *CrowdButton*, investigates combining micro-volunteering and a situated crowdsourcing platform for contributing towards a problem-solving effort with high-quality results [16]. In another example, public displays and

crowdsourcing were used to poll public opinion on matters of local relevance [14].

The organisers of this workshop have been on the forefront of the recent developments of situated crowdsourcing. At UbiComp'13, Goncalves et al. [4] presented the first attempt to investigate altruistic use of interactive public displays in naturalistic usage settings as a crowdsourcing mechanism. The main objectives were to investigate different levels of motivation, to compare performance between situated and online crowdsourcing, and analyse different worker behaviours when completing tasks in this setting. In a follow-up paper, Goncalves et al. [6] developed a crowdsourcing game that enabled the creation of a keyword dictionary to describe locations leveraging the crowd to both provide and evaluate input.

Further, at UbiComp'14, Goncalves et al. [11] developed and validated a projective test to detect individuals' current emotion. The aggregated crowdsourcing results successfully captured the community's diurnal rhythms of emotion consistent with an independent conduct DRM study and literature on affect. Hosio et al. [15] investigated the feasibility of a situated crowdsourcing market with a variety of tasks and worker payment. Their results showed that a situated crowdsourcing market can attract a populous workforce with comparable quality of contributions to its online and mobile counterparts. A more recent version of the platform has also been reported with improvements to the user interface and ease of pushing tasks to the platform [5]. Finally, more recent work has shown the potential of situated crowdsourcing to solve real-word challenges, namely improving queues and customer experience within campus restaurants [10].

Objectives of the Workshop

This workshop is conceived as a follow-up of the Mobile and Situated Crowdsourcing workshop at the 2015 UbiComp conference in Osaka, which brought together researchers and practitioners from various backgrounds. This year, we intend to follow the success of the workshop's previous editions and provide a shared forum for researchers interested in crowdsourcing using ubiquitous technologies. Particularly, we are interested in attracting those that normally conduct crowdsourcing experiments using online platforms, but could benefit from using mobile and other ubiquitous technologies is some cases. We hope this workshop will make an impact as a venue for crowdsourcing researchers to join and share their knowledge, experience reports, novel applications and ideas. The long-term objective of this workshop is to foster a community interested in conducting crowdsourcing experiments beyond the desktop, leveraging ubiquitous technologies for this purpose.

Expected outcomes

We encourage contributions especially in the following key areas and considering a mobile or situated crowdsourcing context:

- Applications: crowdsourcing applications that can benefit from being conducted using mobile or situated technologies as opposed to using online platforms.
- Quality control and incentives: designing crowdsourcing applications that encourage truthful responses.
- Methodologies: methods and methodologies used for gathering and evaluating crowd contributions.
- Behaviours: providing an understanding of worker behaviours.

All accepted manuscripts will be included in the ACM Digital Library and supplemental proceedings of the main conference. All workshop papers must be up to 6 pages long in the SIGCHI Extend Abstract archival format, and be ready for inclusion into ACM digital library and the supplementary proceedings by July 5, 2016.

Attendance & Workshop Preparations

We will accept around 10 papers through review by the technical program committee to be presented in the workshop. In total we expect to attract 20 to 30 participants (including the presenters and organizers). In order to attract as many submissions as possible and avoid delays on the reviewing process, we will provide all necessary information to all potentially interested researchers as early as possible. We will do so through our website (http://ubicomp.oulu.fi/wmsc2016/), relevant mailing lists and social media.

Important Dates

Deadline for submissions: June 14, 2016
Response to authors: June 28, 2016
Camera ready submission deadline: July 5, 2016

Workshop Structure & Schedule

The proposed workshop on Mobile and Situated Crowdsourcing is planned to cover a full day. We will start by presenting the agenda for the day. Further, the organisers and all attendees will briefly introduce themselves. As for the paper sessions, it will consist of a single paper-track, with participants presenting their submissions within a 10-minute timeslot, followed by a 5- minute discussion. During the workshop, the organisers will also give a 30-minute presentation on the emergence and importance of mobile and situated

crowdsourcing, and about their personal ongoing work on the topic as well. Finally, there will be a one-hour long panel discussion, led by the organizers. The workshop will conclude with a coffee break to continue informal discussion and to network with other researchers. Other coffee breaks are planned in the schedule to promote and incentivise discussion amongst the attendees.

09:00 - 09:30 - Opening & introductions
09:30 - 10:30 - Paper presentations
10:30 - 11:00 - Coffee break
11:00 - 12:00 - Paper presentations
12:00 - 13:30 - Lunch
13:30 - 14:30 - Paper presentations
14:30 - 15:30 - Organisers' presentation & open discussion
15:30 - 16:30 - Coffee and end of workshop (including discussion regarding special issue, collaborations and potential future events)

Organisers

The workshop organisers are all experts in crowdsourcing, and frequent publishers of papers in top venues on this research agenda. Following is a summary of the proposers' backgrounds.

Jorge Goncalves is a postdoctoral researcher and a member of the Center for Ubiquitous Computing group at the University of Oulu, Finland. His research interests include ubiquitous computing, human-computer-interaction, crowdsourcing and social computing. Goncalves received a PhD in Computer Science from the University of Oulu, Finland. Contact him at jorge.goncalves@ee.oulu.fi.

Simo Hosio is a postdoctoral researcher and a member of the Center for Ubiquitous Computing group at the University of Oulu, Finland. His research interests include social computing, crowdsourcing, and large scale public display deployments. Hosio received his PhD from the University of Oulu, Finland. He is a member of IEEE. Contact him at simo.hosio@ee.oulu.fi.

Maja Vukovic is a Manager at IBM T.J. Watson Research Center. Maja's research expertise is in IT service innovation, crowdsourcing technologies and API ecosystems innovation. Maja is a co-founder of a number of workshops: Enterprise Crowdsourcing, Ubiquitous Crowdsourcing and Social Web for Disaster Management. Maja received her PhD from University of Cambridge, UK. Contact her at maja@us.ibm.com

Shin'ichi Konomi is an Associate Professor at the Center for Spatial Information Science at the University of Tokyo, Japan. His research interests include ubiquitous computing, human-computer interaction, context awareness, urban computing, crowdsourcing and computer-supported collaborative work. Konomi received his PhD in Computer Science from Kyoto University, Japan. Contact him at konomi@csis.u-tokyo.ac.jp

Uichin Lee is an associate professor in the Department of Industrial and Systems Engineering, and in the Graduate School of Knowledge Service Engineering at Korea Advanced Institute of Science and Technology (KAIST). He received his PhD degree in computer science from UCLA in 2008. His research interests include social computing systems, crowdsourcing and mobile/pervasive computing. Contact him at uclee@kaist.edu

Summary

In a nutshell, the workshop on Mobile and Situated Crowdsourcing solicits contributions and discussion about the possibilities afforded by the new ubiquitous technologies and their use when conducting crowdsourcing experiments. The organising committee has a strong background in ubiquitous computing and crowdsourcing, conducting and evaluating field trials in authentic environments. We believe this workshop is a great addition to UbiComp, as shown with the 2015 edition.

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