3rd International Workshop on Ubiquitous Mobile Instrumentation

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Abstract
Mobile phones allow us to reach people anywhere, anytime. In addition to the benefits for end users, researchers and developers can also benefit from the powerful devices that people carry on a daily basis. Collectively, mobile phones form a ubiquitous computer. The Ubiquitous Mobile Instrumentation (UbiMI) workshop focuses on using mobile devices as instruments to collect data and conduct mobile user studies, to understand human-behavior and routines, and to gather users' context.

Author Keywords
Frameworks; Middleware; Experiments; Context-aware; User studies.

ACM Classification Keywords
H.m. Information systems: Miscellaneous.

Motivation
Mobile phones are inherently personal and the potential to sense the user's environment, or in other words the user's context, is appealing to researchers. The convenience and availability of mobile phones and app stores make it easier for a researcher to reach thousands of study participants. In this workshop, we bring together researchers who take advantage of the proliferation of mobile devices and use them as

instruments for research on ubiquitous computing. We are especially interested in the mobile devices, systems, applications, methods and tools that were built to explore such rich datasets. More so, we want researchers to share their experiences, successes and frustrations on conducting research in such power and processing constrained devices in order to capture state-of-the-art on theories, models, methodologies and tools that cope with these challenges.

Previously on UbiMI

Evident from previous editions of UbiMI [8,9], the breadth of research questions highlights the biggest challenge for Ubiquitous Instrumentation: multi-disciplinarity and scale [14]. Gustarini and Wac [12] proposed a people-centric mobility sensor that is both privacy- and energy-aware. Rodrigues *et al.* [18] shared experiences on engaging participants for collaborative and longitudinal studies on sensing human mobility. Tamilin *et al.* [22] propose a context-aware mobile crowdsourcing infrastructure to request civic participation into public decision making. Bustos-Jiménez *et al*. [5] present the challenges of a crowdsourcing campaign on QoS of mobile Internet providers in Chile. Besaleva and Weaver [3] CrowdHelp application provides emergency response teams real-time patient assessment by crowdsourcing in-situ information of an incident. Desruelle *et al*.'s [6] web-based ubiquitous application platform, WebinOS, provides support for cross-device access to mobile sensors using HTML5. Rodríguez *et al*. [19] demoed the InCense Toolkit, an interactive ontology builder to enable users to define the configuration of a sensing application. Weiss and Lockhart [25] tackled the challenge of distribution and processing architectures for capturing and analyzing mobile sensor data. Gamecho *et al*. [10] provide a sensor-fusion platform, as a context server. Böhmer *et al.*'s [4] AppSensor tool allows researchers to study mobile application usage. Sano *et al.'s* [20] focused on individuals with Autism Spectrum Disorders (ASD), leveraging mobile sensors to capture context preceding such events. Zhang and Sawchuk [26] leveraged magnetometers in smartphones to detect the usage of household appliances. Üstev *et al*. [23] discuss the challenges of human activity recognition on mobile phones, covering sensor diversity, accuracy and recognition limitations. Marshall [16] provides a sports coaching mobile application for sports researchers and practitioners. Gustarini *et al*. [11] discuss the challenges of human subject studies "in-the-wild" when using personal smartphones.

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Asadzadeh *et al.* [2] investigate users' physical engagement profiles with a pedometer application. Klakegg *et al.* [13] demonstrate the use of Near Infrared Spectroscopy to recognise everyday objects. Andone *et al.* [1] presents Menthal framework to collect mobile and affect/mood data. Sarker *et al.* [21] use phone call logs to model their response behavior. De Masi *et al.* [17] introduce mQoL Smart Lab, a living lab for multidisciplinary and naturalistic studies. Escobar *et al.* [7] present Adkintun, a platform that assesses QoS of mobile Internet connections. Manzoor and Ferreira's [15] Contact Lingo keyboard recognises communications (e.g., chat) language and transitions seamlessly between written languages. Lastly, van Berkel *et al.* [24] instruments an elementary school to capture students experiences and relative distances between pupils on collaborative assignments.

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