Exploring DIY Sentiment Interfaces in Mediated Urban Spaces

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ABSTRACT
With the proliferation of ubiquitous computing technologies in urban spaces novel interfaces allow our experiences to be mediated anytime and anywhere. Besides navigating through cities, capturing our experiences and sharing them with remote friends urban computing increasingly enables the expression of sentiments in real-time. Whereas urban user interfaces are currently mostly limited to smart phones, the aim of this workshop is to bring experts from a variety of scientific domains together, i.e., User Experience, HCI, public displays, and architecture to exchange ideas and discuss the impact of novel interfaces and any-time-anywhere expression of sentiments in urban spaces. Overall, the goal of the workshop is to create a common base and further extend our knowledge on technology mediated urban spaces and its users and how we perceive them from an academic as well as practitioners perspective. This workshop targets the development of an interdisciplinary view on urban spaces and the way we express our sentiments within.

Author Keywords
Urban space exploration; urban computing; sentiment interfaces; mobile and personal devices;

ACM Classification Keywords
CCS: Human-centered computing: Human computer interaction (HCI): Interaction paradigms, Interactive systems and tools; CCS: Human-centered computing: Ubiquitous and mobile computing

General Terms
Design

INTRODUCTION
The notion of the 'smart city' currently shifts from a top-down optimization of the city's infrastructural performance to a cautious approach of empowering citizens to engage actively with urgent urban challenges (Hemment and Townsend, 2013). The technological fundament of the 'smart city' was only possible because of remarkable innovations in Information and Communication Technologies (ICTs). However, its social benefits seem to depend highly on the engagement of 'smart citizens'. With the advent of ubiquitous computing (Weiser, 1991) and its application in urban space (i.e. urban computing (Kindberg et al., 2007)), novel technologies support 'tangible interactions' (Hornecker and Buur, 2006). They provide new opportunities to enable technology-mediated encounters and civic engagement in urban space with the aim to authorize citizens for the social benefit of cities (Struppek, 2006). But how do people actually express their sentiments about social wellbeing in the city? Part of the challenge is that there are currently only a few applications and interfaces that allow people to express their feelings in the urban realm. We will introduce an exemplary system of a media architectural interface (MAIs), which describes the design space of citizens engaging with dynamic content on media façades through shared and tangible artifacts on street level (Behrens, 2014). During the course of the half-day workshop we aim to explore the notion of sentiment interfaces on a theoretical as well as on a hands-on level. Participants are encouraged to present their research and projects as well as get involved in a prototyping session discovering new interfaces for sentiment expressions.

THEMES

In order to stimulate discussion and exchange of ideas on exploring DIY sentiment interfaces in mediated urban spaces we propose the following themes:

- Enabling technologies, software architectures, and protocols for exploring sentiments in urban spaces.

- Tangible user interfaces (TUI), mobile devices, small and large displays, social networking services, bio- and sensor-based networks as singular or mesh technologies for sensing sentiments in urban space.

- Novel applications for Tangible user interfaces (TUI), mobile devices, public displays, and social networking services that enhance exploration of the urban spaces.

- Novel applications that quantify/visualize current amount of sentiments available in urban spaces.

- Interaction concepts and metaphors for sentiments in urban spaces.

- Personalizing the experience of exploring the urban space for people.

- Tools for measuring and assessing the impact of technology on sentiments of mediated urban spaces.

- Understanding the user experience of sentiment applications in mediated urban spaces in a holistic way, i.e., both unmediated and mediated through expression of sentiments.

- Frameworks and toolkits for TUIs public displays, mobile phones, and social networks that work within urban settings.

- User engagement with socio-spatial challenges within the built environment

- Leveraging social networking services and recommender systems within the urban space.

- Application of real-time sentiment sensing and display in public spaces

GOALS

The intended outcomes of this workshop are the following:

- Bringing together researchers and practitioners to discuss how pervasive technologies for sentiment expressions impact the experience of exploring the urban space.

- Creating a common understanding and perspective of the challenges related to exploring DIY sentiment interfaces in urban spaces through pervasive technologies.

- Propose perspectives on how to address these challenges in future research and development of interactive systems for the urban space.

- Develop a research agenda, i.e., which system, HCI, and UX related issues (e.g. models, factors, measurements) for the urban space are important to be researched within the next five years.

ACTIVITIES

We propose a half-day workshop with short presentations to share participants research, a prototyping and DIY tinkering session and a group discussion.

Presentations

The workshop will start with an introduction to the workshop topic (9:00-9:15), followed by very short introductory presentations to get familiar with the participants and the topic they are working on. The introductory presentations will have a Pecha Kucha style – authors will get 5 minutes to present their work having their presentations short and focused. This will allow enough time to discuss different ideas coming out from the presentations (9:15-10.30).

Figure 1 – Exemplary sentiment interfaces: 1) Swipe I like (Behrens, 2011), 2) SCSD Ars Electronica 3) SCSD Sao Paulo (Behrens, 2014).

DIY tinkering session

After a short break we will start a prototyping session (10:30-12:30). Participants will form groups. The aim is to develop ideas for novel sentiment interfaces and scenarios for their application in the urban realm. Ideation will be stimulated through paper prototyping as well as tinkering.

Final discussion

After the hands-on exercise each group will then present orally their results and experiences in designing novel interfaces (12:30-13:00). While listening to the presentations, all participants will be asked to take notes on provided Post-Its, which we will share on a large whiteboard in order to summarize all efforts. We will then discuss identified challenges and opportunities and will jointly sort them out on a whiteboard. The organizers will actively interact with the participants to stimulate

discussion. After that we will summarize key experiences from the workshop and will plan follow up activities.

MEANS OF SOLICITING PARTICIPATION

We will create a website for the workshop. The workshop will be advertised in a number of mailing lists, i.e., Ubicomp, CHI, Lancaster Ubicomp, BCS-HCI, Italian HCI, NordiCHI, German HCI, and Australian HCI, Media Architecture community, UCL Bartlett's mailing list, and ICRI Cities (Intel Collaborative Research Institute for Sustainable Connected Cities, UK). The workshop will be promoted via Facebook and Twitter.

In addition we will contact authors who have published on topics close to workshop themes. The workshop organizers will contact their peers who published on topics related to the ExS 2.0 workshop's themes. We will also go through the last three years proceedings of conferences that have similar or matching interests, e.g., Media Architecture Biennale, Communities and Technologies, UbiComp, Pervasive, CHI, CSCW, DIS, and Space Syntax, in order to promote the workshop and invite authors who published on similar topics.

PARTICIPANTS

The workshop is intended for:

- HCI researcher in general, who are interested specifically in the urban space context

- UX experts, who are willing to adapt UX models and extend UX factors to enhance and assess experiences of urban spaces

- Researchers coming from the Ubicomp/ Pervasive/ Wearable area with interest in developing and deploying applications that explore and augment urban spaces

- Public display designers and engineers both from a scientific, as well as from an industrial perspective

- Media artists and architects interested in augmenting urban spaces with digital information

Workshop candidates are requested to send a position paper (no longer than 4 pages in the ACM format) about their research and link to the workshop theme to the organizers. Participants will be selected on the basis of the relevance of their work and interests and familiarity with the workshop topics. Maximum number of workshop participants is expected to be around 20, including workshop organizers.

DEADLINES

- Workshop submission deadline: 15 April 2015

- Feedback to authors: 30 April 2015

- Workshop at MediaCity5 : 1-3 May 2015

ORGANIZERS

This workshop is organized by Moritz Behrens, Nina Valkanova, Konstantinos Mavromichalis and Ava Fatah, gen. Schieck.

Moritz Behrens

Moritz is an architect and maker, an interaction designer and researcher aiming to combine architecture with human-computer interaction. In his work he focuses on technology-mediated interactions in urban spaces, which support citizens and communities to engage with social challenges in their city. In his recent project Moritz aims to design, deploy and research media architectural interfaces that are built on tangible user interfaces as mediators between citizens and interactive media facades. As part of the EU funded 'Connecting Cities' network and in collaboration with Nina Valkanova, he was invited to produce an interactive installation for the Ars Electronica festival and Riga 2014 festival earlier this year. Currently he is a PhD candidate at UCL The Bartlett in London. Moritz gained a MSc in Adaptive Architecture and Computation from UCL The Bartlett in 2011 and received a masters in architecture from Technical University of Berlin in 2009.

Nina Valkanova

Nina is an interaction design researcher, media artist and creative coder, interested in the exploration of innovative ideas at the edge between technology, art and design. Nina did her PhD in Information, Communication and Audiovisual Technologies with specialization in Human-Computer Interaction at the University of Pompeu Fabra. Her doctoral research comprised a design and empirical inquiry into the potential of combining data visualization and ubiquitous display and sensing technologies for social and civic purposes. Currently, Nina is a senior researcher at the Copenhagen Institute of Interaction Design, where she researchers on interaction design tools that can create and support learning analytics in experiential and hands-on shared settings.

Konstantinos Mavromichalis

Konstantinos is part of the multidisciplinary team Urban Visuals. Recently he has been creating interior architectural, public art and street scale responsive environments utilising embedded LED, projected light, and sensing systems, working internationally in diverse contexts. Konstantinos is interested in how unseen forces in our environment can be made visible through the use of responsive lighting, or large scale displays embedded in architectural form. He is currently working and studying at the Bartlett School of Architecture where his research includes developing interactive digital installations that relate to public space and the built environment long term.

Ava Fatah gen. Schieck

Ava Fatah gen. Schieck is a Lecturer in Digital Interaction on the MSc Adaptive Architecture and Computation

programme at the Bartlett, UCL. Her research interests lie primarily in Architecture, Urban Design and Interaction Design, exploring adaptive design approaches and the spatial experience, which is increasingly, mediated through pervasive digital media technologies. She is in currently exploring the design, implementation and evaluation of location-based experiences mediated through mobile digital technologies and situated displays. Ava was a chair on the academic track at Media Architecture Biennale the 2012 and 2014.

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