Making Places: Visualization, Interaction and Experience in Urban Space

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Abstract

The increase in information gathered and processed by large-scale urban sensors networks has generated a corresponding rise in interest in information visualization and interaction design. Creative initiatives in urban space explore how to translate complex data streams into engaging and meaningful outputs for experiencing and interacting with information. This one-day workshop will bring together practitioners and researchers who are interested in the organisation of human activities in urban space, and how these can be supported by technology in a positive way. This event is intended to share and stimulate an interdisciplinary discussion on the topic, with a view to contributing towards more consistent and creative forms of experiencing urban information.

Author Keywords

Urban space; Pervasive computing; Information visualization; Citizens; Engagement; User experience; Cross-disciplinary.

ACM Classification Keywords

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

Introduction

"Cities are exciting" [8]. People continue to be drawn to urban areas because of the choices that cities offer. Large scale sensor networks and pervasive computing technologies are transforming our city environments as they become augmented with increasingly powerful, networked technologies and media. [4] This raises the question of how these technologies can play a part in improving the use of the spaces that already exist in the urban environment and, critically, what roles information visualization and interaction design have in this endeavor. [7] In the context of so-called future or smart cities, visualizations are especially relevant as they are the tangible outcomes of these systems, while interaction design is the enabler for citizens to engage with this urban data.

Emerging technologies are providing new ways of experiencing information in urban space and, consequently, creating a fertile area for cross-disciplinary research, bringing together computer sciences, social sciences, design, art and music, among others (see for example [1], [2], [3], [5] and [6]). But it is through human activities, that urban spaces become "places". How people experience and conceptualise "place" is formed by the scope and range of what happens in that space and those that inhabit it. The possibilities offered by these new technologies pose challenges for institutions, technologists, designers and of course, citizens themselves.

This workshop will consider ways that interactive technology can be used to maximise the use of space within urban areas for positive outcomes, to enhance the experience of city living that so many of us would like to enjoy. As people's expectations grow, along with the amount of information to communicate, creating multi-sensory information systems is becoming an increasingly challenging task. It requires creative and collaborative approaches to generate outputs ranging from sophisticated digital interventions to more low-tech solutions.

Workshop theme and relevance to the field

The workshop aims to gather examples of the transformation of urban data into engaging visualizations or interactive experiences and interventions. These can be playful, meaningful or multi-sensory. These examples, emerging from complementary disciplines, will be analysed to assess, describe and map themes, design approaches and methods for citizen engagement.

Intended outcomes of the workshop include: a **thematic synthesis** to be presented as a poster at future conferences; an outline of a **research proposal**; a proposal for a **journal article**.

Intended audience

This is an interdisciplinary workshop encouraging dialogue between researchers, technologists and design practitioners who are interested in forming continuing collaborative links. The nature of the workshop will be participatory, with all participants being encouraged to be open to the sharing of ideas with the long-term objective of building research relationships and collaborative networks.

Expected number, balance and selection of participants

The optimal number of participants would be 12 to 16, with a balanced mix of theorists and practitioners. This

number will enable interdisciplinary groups to be formed.

Selection will be made on the basis of individuals' skills, backgrounds and interest in the workshop topics. Submission will be a short paper in Alt Chi format. A website will provide further information on the workshop, and will also document the outcomes of the activities, facilitate network building and further discussions of the themes after the workshop.

Description of activities planned

Morning: Introduction to the topic by the organisers: (30 minutes). The participants will each give a short presentation, then formed into groups ready for the afternoon session.

Afternoon Groupwork: (2 hours) Groups will each work on one of the following topics:

1: Creativity, Information Visualization and Multi-sensory Experiences.

This group will work on a concept narrative/story in a format(s) that uses different sensory information/perception. Paper prototyping material will be provided for each group to illustrate their ideas, but other mediums such as acting can be used for presentations. Participants will be encouraged to record the sounds that accompany their concept.

2: Interactivity and Alternative Models of Sharing and City Making.

This group will work on outlines for a research proposal or a journal article. This activity will be structured in

stages by the organisers, including brainstorming, theme identification and final write up of the outline.

Presentation: (1 hour) Each group will present their early ideas to the whole group for constructive feedback and reaction. The act of presentation to others will help to clarify concepts, and generous feedback will inject fresh ideas.

Final round up: (30 minutes) To conclude the workshop, whole group discussion will be focused, firstly, on the broader issues emerging from the tasks and secondly and the potential for future collaborations.

Facilities needed

Data projector and screen, internet connection and wifi coverage if possible, flipchart paper and pens, tables for groupworking,

Details of Organisers

Michael Smyth PhD. Reader and the Coordinator of the UrbanIxD project that is funded under the EU FP7 programme and is part of the FET Open initiative. He is co-editor of the book entitled "Digital Blur: creative practice at the boundaries of architecture, design and art".

Paula Trigueiros. Dipl Arch, PhD. FEUP. Researcher at Future Cities - Porto Living Lab, and design lecturer since 1993. PhD on Accessibility to Public Access Terminals. Her research interests are inclusive design, interfaces and technologies, accessibility and public transport. She has conducted experimental work on Music and Architecture.

Ingi Helgason. MSc. Researcher and lecturer in interaction design, and technology innovation. She is studying for a PhD on optional interactions with publicly-sited installations, and is an organiser of This Happened Edinburgh events

Sarah Gallacher. UCL researcher at ICRI – Sustainable and Connected Cities. Her research interests include crowdsensing and playful technologies for public engagement in urban spaces. Her work includes the design and development of physical computing prototypes and "in the wild" evaluations in city environments.

Alison Burrows. Postdoctoral researcher in User-Centred Design for the SPHERE-IRC, and part of the Interaction and Graphics Group at the University of Bristol. Her research focuses on inclusive design, user experience, technology and healthcare.

António Coelho. Senior researcher at INESC Porto and Assistant Professor at the Department of Informatics Engineering of the FEUP. His work includes the areas of Computer Graphics, Serious Games and Geospatial Systems.

Filipa Wunderlich. BAMus, Dipl Arch, PhD. Lecturer of Urban Design at the Bartlett School of Planning, UCL. Her research focuses on the analysis and design of urban places, in particular, on the understanding and integration of temporal and sensorial attributes into new methods of analysis and delivery of new urban spaces.

Rui Penha. PhD. Composer and performer of live electroacoustic music. He has a deep interest on music technology, both in software programming and the development of new interfaces for musical expression. He was the founding curator of Digitópia @ Casa da Música and teaches in several portuguese universities (FEUP, DeCA-UA, ESMAE).

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