Multimedia Ubiquitous Technology for Opportunistic Social Interactions

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Abstract
This workshop will discuss how different multimedia applications and interaction techniques have been employed to support public sociality—from collocated interactions to social awareness and feeling of community. Participants will discuss recent work and join hands-on design activities to envision new ways for potential users to discover and learn how to use ubiquitous technologies for opportunistic social interactions.

Author Keywords
Social interaction; public space; ubiquitous computing

CCS Concepts
• Human-centered computing~Ubiquitous and mobile computing theory, concepts and paradigms

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous; K.4.2. Computers and society: Social Issues;

Introduction and motivation

The identity, socio-structural development and livability of public spaces strongly depends on the quality of interaction and connection between collocated individuals [1,2,9,22]. On one hand architecture can be designed to breach beyond mere superficial appearance with the aim of supporting situated sociality, inspired e.g. by related social research [23], the arts [13,15] and philosophy [7,8]. On the other hand it can never be predicted for sure how spaces will be appropriated in practice and over time [3,5,8]. In our urban scenarios ubiquitous technologies function as infrastructure that can both subtract or enhance our daily connection with the surroundings and with other inhabitants [10,18,21].

People nearby applications [6] such as dating applications and social networks are now very prevalent. Such systems are often argued to discourage rather than enhance connection between nearby people [12,21]. Social happenings and pop-up events can also support encounters between acquainted and unacquainted individuals. Nevertheless both events and mobile application tend to attract only users with specific interests and motivations. The make up of public spaces can instead be very heterogeneous and inhabitants can have very different interests, skills, demographics, and familiarity with the environment [20,24]. While interaction and connection between diverse individuals is highly valued for its social benefits [4,19], most dedicated technologies in this field rely on matchmaking between individuals with similar interests and existing motivations to connect with others. Studies demonstrate how we often consider useless or undesirable connecting with collocated others, even though a brief encounter between unacquainted can add great unexpected value to our daily routines [4]. This gives birth to paradoxical situations in which we can feel lonely even if surrounded by others, often "familiar-strangers" that we encounter daily but not interact with [11,14,17].

Multimedia technologies for daily-unplanned social interactions have been deployed mainly in ludic contexts such as events and exhibitions, but rarely studied as permanent stand-alone infrastructures that users can approach in between daily activities without instruction from the researchers. Novel research has started to consider how more subtle forms of engagement such as reactive creation and access of movement-based social information [15,16] could be deployed to support curiosity and social awareness in opportunistic daily interactions [14]. A re-discussion and envisioning of novel modes of engagement is needed to render interactions with social technologies more accessible in our day-to-day life.

Workshop Goals

The workshop aims at building discussions, critiques and proposals for the design of novel interventions capable of supporting sociality at different levels in daily-inhabited public spaces. By joining expert talks participants will expand their vocabulary and knowledge on existing technologies and techniques affecting public social interactions. We will collectively discuss existing interactions examples with ubiquitous social technologies for collocated sociality, collaboration and social interplay and envision alternative modes of interaction.

Hands-on activities will help the collective discussion, critique and envisioning of novel interactive solutions. At the completion of the workshop we plan to have

mapped existing technologies, the related interaction modalities, their underlining relations and alternative design solutions in different interactions scenarios. Participants will explore and propose novel interactions with ubiquitous social technologies fostering different modes of engagement with a focus on enhancing opportunistic, serendipitous aspects of interaction.

Workshop Themes

The workshop gravitates around three main key concepts: ubiquitous and mobile interaction, opportunistic interaction, and sociality. Technological focus areas will be:

- personal and public interactive technology
- mixed reality systems
- tangible and embedded technologies
- interconnected and single devices
- wearable and mobile systems
- social impacts of technological interventions

We focus on sociality by considering multi-context interaction scenarios (work, ludic, mobility contexts) in which a technological intervention is documented to particularly effect social awareness, curiosity towards the environment and nearby people, feelings of belonging and connection to a community, and face-to-face interaction.

We extend the consideration to how potential users can discover, learn and interact with ubiquitous social technologies in more opportunistic ways, less effortlessly in-between daily tasks without the need of specific instructions and strong motivation.

Workshop Format

Following a brief introduction round, the workshop is divided into 4 modules, each composed by 3 sections: an expert talk, a hands-on group based design activity and a collective discussion. Some module sections will be held in different location to support activities and reflection in relation to existing public places (within, and in close proximity to the conference venue).

Module 1: introduction to Ubiquitous Technology for Opportunistic Social Interactions

The moderator will give a brief warm-up overview of tools and technologies supporting different aspects of sociality in different settings. Emphasis will be put on serendipitous opportunistic interactions particularly affecting sociality in terms of social awareness, curiosity, feelings of community connectedness, and face-to-face interaction. Participants are asked to gather documentation (notes or pictures) of social interactions to support discussion on how these unfold around specific situated objects, spaces, practices and roles.

Module 2: rethinking tools

The expert talk will demonstrate how interventions can be designed to either facilitate, constrain, create social practices and identity to ease collocated sociality. Group reflections will be elicited though focused activities (e.g. with question cards) and categorizations of participants' documentation (notes, pictures gathered during module 1) on an iterative wall map.

Module 3: rethinking spaces

The expert talk will give an overview of existing social technologies and how they relate to specific settings. In

groups, participants will choose an existing intervention and think how to re-propose it in a different public setting (e.g. conference plaza; cafeteria etc.). Each group will discuss and justify the chosen adaptation. Participants will stage the envisioned interactions as a way to trigger collective reflections and implement the wall map.

Module 4: rethinking roles
The expert talk will overview the roles arising in interaction through metaphors brought from performance and theater. The module will highlight the function of users roles in the discovery and learning of novel technologies with a focus on public settings. Participants will stage some of the envisioned interactions with the introduction of unexpected happenings/roles.

Final discussion: rethinking interaction
We will draw collective reflection from observations and reorganization of the wall map implemented iteratively at each module.

Expected Outcomes & Future Directions

At the completion of the workshop participants will have broadened their knowledge of how technologies can be differently designed and implemented in daily settings to support differently structured social interactions. A mind-map of a relatively broad area will be iteratively and collectively implemented at each module. The collective mind-map will facilitate our critical discussion of different approaches in the design of ubiquitous social technologies.

Intended Audience

The workshop focus on daily aspects of sociality and social interaction will greatly benefit by participations of heterogeneous audience with different academic knowledge (field) and expertise. No specific material or paper submission is required in order to participate.

Organisers Background

Beatrice Monastero is a PhD student at Aalto University researching how daily objects can be augmented with embedded technologies to support public opportunistic sociality. She investigates how users of public spaces discover and use augmented objects and the effects on sociality over time.

Thomas Olsson is an associate professor at University of Tampere, focusing on social computing and the experiential and social implications of IT. His research interests include designing socially aware and acceptable information technology, enhancing social interaction, and Big Social Data analytics.

Andrés Lucero is associate professor of interaction design at Aalto University. His work focuses on the design and evaluation of novel interaction techniques for mobile devices and other interactive surfaces.

Giulio Jacucci is a professor at the University of Helsinki, and founder of MultiTaction Ltd. His research interests include multimodal interaction, physiological, tangible, and ubiquitous computing, search and information discovery, as well as behavioral change.

Tapio Takala is a professor at Aalto University specializing in computer animation, motion capture and analysis and embodied/enactive interfaces.

Robb Mitchell is associate professor of social interaction design at University of Southern Denmark. He is an Environmental Art graduate from Glasgow School of Art with a background in interactive installations and multimedia event production.

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