
IwS: Interacting with Sound— A Workshop Exploring Context-aware, Local and Social Audio Applications

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Abstract

In this workshop, we explore novel applications, services, tools, and systems that take advantage of the audio channel on mobile devices to feed users with a flow of information. We call for innovative ideas to introduce ambient context-aware, location-aware, and/or social audio as a more effective means of communicating information and providing experiences to mobile users.

Keywords

Mobility, audio, context-awareness, LBS

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms

Design, Human Factors, Experimentation

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Proposal

In this workshop, we explore novel applications, services, tools, and systems that take advantage of the audio channel on mobile devices to feed users with a flow of information. The current generation of mobile applications focuses almost entirely on visual or haptic interactions. The effectiveness of these interaction modes may be severely impaired depending on the activity and the environment of mobile users as well as the limited visual real-estate on small devices. The audio channel does not have these limitations, yet very few applications fully exploit sound interactions beyond simple alerts, music, turn-by-turn directions and SMS audio feeds.

The fact that there is a growing need for mobile hands-free services can be seen in emerging information and communication-centric offerings such as Jawbone MyTalk applications [1], Shazam [2], Ford Sync [3], Dial2Do [4], Megaphone [5], and HeyTell [6]. These services are mostly focused on advanced voice control or on-demand speech recognition, whereas other types of sound interactions, such as location-aware music and audio information feeds, are still largely unexplored. Another recent trend in mobile applications is pervasive gaming where fiction and reality is mixed, and the virtual and physical worlds blend, e.g. Momentum [7], Scvngr [8], iSpy [9], and myTown [10]. We envision that more sophisticated audio interaction models as explored in this workshop could have a huge impact in entertainment and gaming applications as well, allowing for a more immersive and less intrusive experience.

Topic

We will discuss the use, implementation, benefits and risks of mobile, context-aware and social audio. Many of today's mobile services are multimodal, meaning that they primarily require the user to look at the screen, and perhaps secondarily, listen to the device. Alternatively, what if mobile devices provided a steady stream of audio as a context-aware layer on the world around you? What if music playlists were designed to add an emotive audio layer to your surroundings? Can a truly hands-free location-based service be designed? These are some of many questions we would like to discuss with interested researchers in our workshop.

We are interested in this topic from various perspectives. In regards to user experience design, how would one interact with a pure audio interface? What type of alerts/updates would users subscribe to if they could consume them via audio?

Position papers are solicited in, but not limited to, the following types of application areas:

- Hands-free LBS: Can information be presented and filtered in a non-intrusive, hands-free, user controlled way?
- Location-aware Music/News/Audio: How can we feed entertainment and news broadcast to users based on their location?
- Car/Bike/Walk/Run Audio Guides: How do we provide users on the go with a virtual audio guide?

- Pervasive Games: Can games be played and controlled through the audio channel?
- Applications for Vision Impaired: Can we provide novel sound interactions to aid the vision impaired, or for situations where it is too dark to view and interact with a small smartphone display?
- Real-time Audio and Location-casting: How can we coordinate groups of people through audio and location broadcasting services?

Pre-Workshop Plan

We plan to recruit recognized practitioners and researchers in the field to serve on the program committee. The goal is to have enough members to allow us to deliver three high-quality peer reviews per position paper. The submission and review process will be handled through the EasyChair conference system. We will communicate and announce news through the conference web site which also has basic social media features to allow commenting and rating of ideas. The authors will be notified of acceptance May 15th and they will then be given 2-3 weeks to submit a final version. The final version will be published on the conference web site at least one week before the workshop. At that time the final agenda of the workshop will also be published.

Workshop Plan

The workshop will be split into two 1 hr and 15 minutes sessions with a mid-morning break. The first session will begin with a brief intro to the topic area, then all participants will briefly introduce themselves and share details on their current work or motivation for attending

(3 minutes). The second session will be a facilitated discussion on the topic area including state of the art, resources, and usability. The workshop will conclude with a demo session. The demo session will serve as a means to build, explore, and exchange hands-on (-free) sound experiences.

Post-Workshop Plan

Additional material associated with the position papers such as presentations and demos will be published on the web site. A post-mortem report of the workshop outcomes will also be made available.

Organizers

Thomas Sandholm is a Research Scientist in the Social Computing Group at HP Labs in Palo Alto, CA, USA. He holds a Ph.D. in Computer and Systems Sciences from the Royal Institute of Technology in Stockholm, Sweden. He has more than 10 years of research experience in the areas of distributed systems, computational markets, location-based services, crowdsourcing, recommender systems and social computing. His current research focus is on context-aware, mobile services. He is the inventor of the HP Gloe mobile Web geotagging service. Thomas was the tutorial chair at ICSOC 2010, and he has served as a reviewer or program committee member at numerous international conferences and journals, including ACC-CLOUD, ACM EC, EC Web, ICSE Cloud, DAPD, COMAD, FGCS, and SIGMETRICS.

Elsa Kosmack Vaara is an MA Interaction designer at the MobileLife centre at Stockholm University. Her research interests are about inspire/motivate people to reflect upon and (maybe) change their behavior in everyday life....She has a background in classical music, architecture and

industrial design. Currently she is working in the Affective Health (affectivehealth.blogspot.com) and Playfulness projects.

April Slayden Mitchell is a Senior Research Engineer in HP's Mobile and Immersive Experiences Lab in Palo Alto, CA. She has a Master of Science in Computer Science from the University of Rochester in Rochester, NY, and has been with HP for 8 years where she is focused on designing new personal collaboration technologies. Her area of expertise is user experience and interaction design, and she has published work on a variety of different topics including mobile telepresence, secure interfaces, and music collaboration. April led the design of the original user interface for HP's Visual Collaboration Studios, and she is the author of 5 granted patents and over 20 pending patents. She received a best-paper award at ACM CHI in 2007 for her research on mobile video behavior and is the co-creator of the Gabble video conversation site. Having formerly served as general chair, April is now a member of the steering committee for ACM HotMobile and has served as a reviewer or program committee member for numerous international conferences and publications including MobiCASE, IEEE ISWC, ACM CHI, IEEE Pervasive, and Mobile Networks and Applications.

Jonas Söderberg is a graduate composer of electro-acoustic music from the Royal University College for Music in Stockholm, but has a broad base of creative activity where his role as a composer often mixes with that of drama teacher, theatre director and sound designer. He has worked for two different periods as head for municipal theatre schools, and when the Stockholm City School of the Arts (Scandinavia's largest culture school, with 400 teachers and 25000 pupils) was launched in 1996, he was appointed Manager of Program Development, a position

he was holding until 2000. He has worked as a researcher and adviser in pedagogical and media related questions at the Interactive Collaborative Environments Lab at the Swedish Institute of Computer Science since 1997 (fulltime since 2000)

Alex Vorbau is a UX Engineer in Cloud Services at HP in Palo Alto, California. His work is focused on technology that bridges distance among people, social and mobile media. His recent work includes a mobile social coordination service, a crowd-sourced decision making service called Rankr, and a group video messaging service called Gabble (hpgabble.com). Alex has ten years of experience as a researcher in the field and five years prior experience as a systems engineer.

References

- [1] Jawbone My Talk Beta
<http://mytalk.jawbone.com/>.
- [2] Shazam
<http://www.shazam.com/>.
- [3] Ford Sync
<http://www.ford.com/technology/sync/>
- [4] Dial2Do
<http://www.dial2do.com>.
- [5] MegaPhone
<http://megaphonelabs.com>.
- [6] HeyTell
<http://www.heytell.com>.
- [7] Momentum
<http://momentum.sics.se>
- [8] Scvngr
<http://www.scvngr.com>
- [9] iSpy
<http://ispyapp.com>

[10] MyTown
<http://www.booyah.com>

Call for Participation

We are interested in submissions of novel, previously not published work on relevant topics including:

- Hands-free LBS
- Location-aware Music/News/Audio
- Car/Bike/Walk/Run Audio Guides
- Pervasive Games
- Applications for Vision Impaired
- Real-time Audio and Location-casting

The workshop is a half-day, hands-on, mix of presentations, discussions and demos. Each participant is expected to present and discuss his/her submission. Interested participants are encouraged to present demos, e.g. sound experiences.

The best workshop paper will receive an award, and all the accepted papers and presentations will be published on-line on the workshop web page. The goal is to create a community around this new and exciting area among practitioners and researchers and to foster further collaboration.

We invite researchers and practitioners to submit workshop position papers (max 4 pages) using the ACM MobileHCI submission format for short papers at <http://www.mobilehci2011.org/node/45>.

Papers should be submitted through the EasyChair conference system at

<https://www.easychair.org/conferences/?conf=iws2011>

The papers should present novel ideas and concrete implementations of innovative mobile sound interaction solutions. All papers will be peer-reviewed by at least three reviewers and evaluated based on their originality, clarity of presentation, and relevance to the workshop.

The workshop will be held in conjunction with the 2011 MobileHCI conference in Stockholm, Sweden. Submission of a position paper implies that at least one author is willing to present the paper and register for the workshop as well as the MobileHCI conference. More detailed information is available on the Workshop web page: <http://iwsws.wikidot.com>

Paper Submission Deadline: April 8th 2011

Notification of Acceptance: May 15th 2011

Workshop: August 30th 2011.

