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Workshop: Accessible Interaction for Visually Impaired People

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1. Introduction

Improving access to information and technology for visually impaired people is a significant challenge within the field of Human-Computer Interaction. In the last decades assistive technology has helped to increase the autonomy and quality of life of the 285 million visually impaired people worldwide. Interactive technologies can support visually impaired people in many tasks, such as navigation and wayfinding, reading and writing, access to education, or even gaming (Brock et al. 2015, Scheibler 2014). It also helps disabled people to stay in touch with friends and participate in social networks and communities (van der Geest et al. 2014).

Although legal regulations on accessibility (e.g. BGG 2003) and detailed W3C-guidelines (2009) exist since many years, the majority of websites, location based services, e-learning applications and games are still not designed and programmed to be accessible, even with assistive technology (vgl. AbleGamers Foundation 2012, Köhlmann 2014, Michalska et al. 2014, Wentz & Lazar 2011). In addition, the specific needs of people with different forms of visual impairment and blindness are not sufficiently considered (Kleynhans & Fourie 2014).

Hence, this workshop concerns accessibility of all kinds of digital media and services. Besides dedicated assistive technologies, audio- and gesture-based interfaces are also of interest in this context, because they work without visual interfaces and can generate an innovative user experience for sighted as well as blind users. Some audio-based computer games are already designed as special kind of game for sighted and blind players (Collins 2013, Friberg & Gärdenfors 2008).

2. Topics

The workshop addresses HCI researchers and practitioners working on assistive technology for visually impaired people, accessible design methods and instruments for web designers and programmers. We intend to identify shared challenges and common avenues for future work. The following subjects will be presented during the workshop:

Thea van der Geest and Hendrik Buimer present a user-centered priority list of difficult daily life activities experienced by visually impaired people. The list reflects important user needs and is a foundation for the development of accessibility requirements for new ICT applications and devices, such as smart glasses or other wearables. In a similar approach, **Limin Zeng** talks about his ongoing survey about the outdoor travel needs and mobile device usage of visually impaired people in different countries.

The next papers discuss concrete solutions for visually impaired peoples' current problems. **Boris Schauerte, Torsten Wörtwein and Rainer Stiefelhagen** demonstrate a web-based sonification platform that allows blind users to interactively experience a wide range of information such as maps or graphs. **Daniel Hänßgen** describes an alternative approach for making maps accessible: He presents a system that uses OpenStreetMap-Data and is capable of embossing tactile maps into braille paper. **Stephan Seifermann and Henning Groenda** address accessible software description languages and describe a collaborative editing environment consisting of an accessible textual UML editor with state-of-the-art user support and consistency preservation mechanisms for real-time collaboration.

Annika Fecke, Sabine Jeleniowski and Martina Joisten argue that one reason for inaccessible websites is a lack of awareness and expertise of web designers. They demonstrate a prototype with accessibility guidelines that are optimized for the needs of web designers. In a second contribution, they examine how accessible Facebook currently is.

The last article by **Sonia Fizek, Julie Woletz and Jaroslaw Beksa** introduces a digital audio game and discusses selected play interaction solutions. The authors will elaborate the design questions raised at early stages of the project, and confront them with the results of testing performed on two groups of sighted and one group of visually impaired gamers.

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