1st International Workshop on Augmenting Usability Evaluation

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ABSTRACT

The aim of the workshop is to collect, share and discuss approaches that support and extend the (semi-)automatic evaluation of (complex) interactive system applications with a focus on the user interface. Augmenting and supporting usability evaluation can refer to different channels and techniques: GUIs, Voice UIs, Tangible UIs, etc. After a short introduction to the workshop, an invited speaker will give a keynote presentation on an approach to augmenting usability evaluations. This will be followed by presentations from the authors of the accepted workshop papers. We expect relevant contributions from computer scientists, designers, data and AI experts, psychologists, etc. The aim of the workshop is to create a heterogeneous community for future information exchange.

KEYWORDS

Usability, Evaluation, Formalisation, Development, VA/AR, Pattern, Prototype, Assessment, WCAG, ISO 9241

1 DESCRIPTION OF THE WORKSHOP

1.1 Topic and content

Objective. The aim of the workshop is to collect, share and discuss approaches that support and augment the (semi-) automatic evaluation of (complex) interactive applications focusing on the user interface.

Context. There exist many guidelines, norms and standards on how usability can be evaluated (DIN EN ISO 9241, W3C WCAG, VDI/VDE 3850, ...). However, the evaluation itself is still to be executed by humans. This can be a tedious, erroneous, lengthy and expensive task. Furthermore, the results can vary depending on the executing expert. Therefore, this important stage in the development of interactive applications is often shortened or omitted altogether. It is hence desirable to both support and streamline the evaluation of an applications usability.

Content. Augmenting and supporting the evaluation of the usability can be achieved with regard to many different channels and means, e.g.:

- Formalizing "soft" criteria (Usability knowledge) in the ISO 9241 and WCAG, e.g. suitability for the task, self-explanatory, ...
- Evaluating screen-recordings by way of image recognition techniques
- Evaluating existing implementation code of an application in order to derive a formal model which in turn can be formally evaluated
- Evaluating prototypes and assessing various properties with regard to their usability
- Not only the usability of the ubiquitous graphical user interface can be supported, but also the usability of other means of interactions. E.g. Voice interfaces are by design tightly structured, potentially offering an easier approach to formal evaluation.

The support may or may not replace the human in the loop. It is expected that in most cases, humans will still have the last word when it comes to classifying and judging the results of the support. Hence a complete automatization will be a topic of the future, currently we look forward to many ways of an augmentation of the evaluation process.

Target Audience. Different communities and disciplines are involved in developing such a topic, both in the research and in the development practice. We expect to get relevant contributions from computer scientists, designers, Data and AI experts, psychologists, etc. The workshop's goal is to set-up a heterogenous community for future information exchange.

Format. Half-Day Workshop during the conference dates. After a brief introduction to the workshop, there will be a keynote presentation held by an invited speaker about an augmented usability evaluation approach. Afterwards there will be presentations by the authors of accepted workshop papers. The workshop organizers take care of a scientific review process and will involve other researchers and colleagues in a Workshop Program Committee. Dependent on the number of (accepted) submissions for presentations in the workshop and their clustered topics we aim to have several discussion groups preparing a contribution towards a general roadmap on Augmenting Usability Evaluation followed by a plenary discussion.

1.2 The organizing team

Gerrit Meixner is research professor for Human-Computer Interaction in the faculty of computer science of the Heilbronn University of Applied Sciences in Germany, managing director of the Usability and Interaction Technology Laboratory (UniTyLab) and Program Dean for the Master program of Software Engineering

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and Management (MSEM). Furthermore, he is Affiliated Professor for Human-Computer Interaction at the School of Electrical Engineering and Computer Science at KTH Royal Institute of Technology Stockholm and Associated Professor in the Medical Faculty of Heidelberg at Heidelberg University. He got his diploma and his master's degree in computer science from the University of Applied Sciences Trier and his doctoral degree in Engineering focusing on Human-Machine-Interaction from the Technical University of Kaiserslautern. He has published more than 140 papers in different Human-Computer-Interaction related conferences, journals and books. In 2015 he got the Research Transfer Award from the Chamber of Industry and Commerce Heilbronn-Franken. His main research interests are in usability engineering and innovative interaction technologies (e.g., Augmented and Virtual Reality). He is chairman of the research cluster „Human-Computer Interaction"at the Baden-Württemberg Center for Applied Research (BW-CAR), chairman of the section "Software Ergonomics" at the German Informatics Society (GI) and chairman of the Technical Committee 5.31 "User-Centered Development of Industrial User Interfaces" at The Association of German Engineers (VDI). Furthermore, he is member of the editorial boards of the Journal of Healthcare Informatics Research (Springer), i-com (de Gruyter) and Information (MDPI).

Markus Dahm is professor for Informatics and Software-Ergonomics at HS Düsseldorf University of Applied Sciences since 2004, Program Dean for the Bachelor program in Media Informatics and Study Dean of the Faculty of Media since 2005. He got his diploma in Electrical Engineering at RWTH Aachen and a Master in Computing Science as a scholarship student at Imperial College London. For his Ph.D in Engineering at RWTH Aachen, he developed a natural language programming language in order to facilitate user participation in interdisciplinary projects further. He authored a textbook on HCI, contributed several papers on Mensch und Computer and Delfi in various areas (e.g. Usability vs. Security, Usability of Feature Phones, Tangible Visualisation of a Datastream, Gamification in Learning) and is a member of the program committee of Mensch und Computer, Humans and Computer, Advances in Computer Entertainment Technology conferences. His main area of research is the support of novices in programming. Both didactic concepts and an IDE with specialized features and integration of all artefacts in the development cycle was developed over many years, used productively and evaluated in the lab work of a Media Informatics course. The research was supported by grants in the Digitale Hochschule programm Digi-Fellows. The results have been published on various occasions on Mensch und Computer and Delfi conferences including a best paper award 2015. Evaluation of complex applications are both a topic of study courses, as well as thesis works. From this work, the impulse arose to augment and support the evaluation and the evaluators by appropriate systems, optimally in the early prototyping stages. As a member of the section "Software Ergonomics" at the German Informatics Society (GI)since 2008, he co-authored the curriculum for a base course in HCI, and organized the GI Usability Challenge. In the section "Software Ergonomics" Media Informatics, he co-authored the Curriculum for Media