SmartObjects: Fourth Workshop on Interacting with Smart Objects

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ABSTRACT

The increasing number of smart objects in our everyday life shapes how we interact beyond the desktop. In this workshop we discussed how the interaction with these smart objects should be designed from various perspectives. This year's workshop put a special focus on affective computing with smart objects, as reflected by the keynote talk.

ACM Classification Keywords

H.5.m User Interfaces: Miscellaneous: .

WORKSHOP CONTENT

There is an ongoing trend to put computing capabilities into everyday objects, turning them into smart objects [5]. Well known examples range from smart kitchen appliances (smart coffee machines, smart knifes and cuttings boards) [1, 2] to smart (tangible) objects [3, 4] and even urban infrastructures [8]. While other venues have focused on the many technical challenges of implementing smart objects, far less research has been done on how the intelligence situated in these smart objects can be applied to improve their interaction with the users. This field of research poses unique challenges and opportunities for designing smart interaction. Smart objects typically have only very limited interaction capabilities. Yet, their behavior exhibits an amazing amount of intelligence. More information about the previous workshops can be found on our website at `http://www.smart-objects.org/`.

Extending the topics of our previous workshops, this year's workshop emphasized affective computing with smart objects with a keynote talk by Jean-Claude Martin[1]. Enabling objects to sense and react on human emotions broadens the acceptance and usefulness of such technologies. However, the physical restrictions in smart objects are very high, which sparked interesting discussions among all participants. Furthermore, the workshop focused on topics like user experience, sensing and actuation technologies, psychological aspects, and application scenarios with respect to smart objects.

PARTICIPANTS AND WORKSHOP PUBLICITY

The workshop had an interdisciplinary appeal. Our participants originated from the areas of IUI, HCI, UbiComp, IoT and related areas like psychology and product design. The program committee comprised researchers who are active in these research areas and who, moreover, encouraged researchers to submit to this workshop. Thereby, we ensured active participation in preparation and execution of the workshop. We especially encouraged young scientists and Ph.D. students to submit papers to explore their research topics with domain experts. The call for papers and participation was distributed through well-established mailing lists and websites in various research communities, including IUI, CHI, UIST, UbiComp, ITS and TEI. We also promoted the workshop through our website and OSNs. Always held in conjunction with IUI, the first workshop took place in 2011 (Palo Alto[2]) with following workshops in 2013 (Santa Monica[3]) and 2014 (Haifa[4]). These previous workshops were very successful, which helped us to attract other new participants to this workshop as well. The results of the workshop are made available on the workshop website as well as in the joint CEUR proceedings.

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[1] https://perso.limsi.fr/wiki/doku.php/martin/accueil
[2] http://www.smart-objects.org/2011/
[3] http://www.smart-objects.org/2013/
[4] http://www.smart-objects.org/2014/

FORMAT

Our full-day workshop accepted submissions in the following three categories:

(i) position papers and posters (2 pages) focusing on novel concepts or works in progress, (ii) demo submissions (2 pages) and (iii) full papers (4-6 pages) covering a finished piece of novel research.

Our goal was to attract high-quality submissions from several research disciplines to encourage and shape the discussion, thus, advancing the research of interacting with smart objects. To stimulate discussion between the workshop participants we conducted a poster and demo session to spark further in-depth discussions on selected topics. We also collected topics during the workshop whereby we focused on combining complementary topics. As in previous workshops, this strategy lead to a lively and productive discussion during the remainder of the conference. We also summarized the outcome and published it on the workshops website in addition to the joint CEUR proceedings. This publication strategy attracted higher quality submissions, and increased the exposure of the workshop before and after the event.

ORGANIZERS AND PROGRAM COMMITTEE

Most of the organizers were already members of the first three workshops on interacting with smart objects, held in conjunction with IUI 2011 [2], 2013 [6] and 2014 [7].

Dirk Schnelle-Walka leads the "Talk&Touch" group at the Telecooperation Lab at TU Darmstadt. His main research interest is on multimodal interaction in smart spaces.
Jochen Huber is an SUTD-MIT Postdoctoral Fellow at the MIT Media Lab, focusing oninteraction design for smart mobile projections and wearable technology.
Tobias Grosse-Puppendahl is a PhD candidate at Fraunhofer IGD in Darmstadt. His research focuses on new ways of perceiving the environment with unobtrusive modalities like capacitive sensing.
Stefan Radomski is a PhD candidate at the Telecooperation Lab at TU Darmstadt. His main research interest is about multimodal dialog managment in pervasive environments.
Oliver Brdiczka is the area manager of Contextual Intelligence at Palo Alto Research Center (PARC). His group focuses on constructing models for human activity and intent from various sensorsranging from PC desktop events to physical activity sensorsby employing machine learning methods.
Kris Luyten is associate professor at the Expertise Centre for Digital Media - iMinds, Hasselt University. His research focuses on engineering interactive systems, ubicomp, multitouch interfaces and HCI in general.
Max Mühhlhäuser is full professor and heads the Telecooperation Lab at TU Darmstadt. He has over 300 publications on ubicomp, HCI, IUI, e-learning and multimedia.

The list of program committee members is as follows:

Bo Begole (Samsung, USA), **Marco Blumendorf** (DAI Laboratory, Germany), **Aba-Sah Dadzie** (University of Birmingham, United Kingdom), **Fahim Kawsar** (Bell Labs, Belgium), **Alexander Kröner** (Technische Hochschule Nürnberg, Germany), **Germán Montoro** (UAM, Spain), **Patrick Reignier** (Inria, France), **Boris de Ruyter** (Philips, Netherlands), **Geert Vanderhulst** (Alcatel-Lucent Bell Laboratories, Belgium) and **Raphael Wimmer** (Universität Regensburg, Germany).

PC members helped the organizers to publicize the event in more scientific communities and allow for a competent peer-review process. All submissions were peer-reviewed by at least two reviewers.

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