

# Second International Workshop on Smart Healthcare Applications (SmartHEALTH'10)

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## ABSTRACT

Research in the area of smart healthcare systems has reached a point where significant improvements are only possible if academics and practitioners from various disciplines collaborate in order to develop new strategies for conceptualizing, designing, and implementing new applications. The underlying strategies must be harmonized and balanced in two ways: first, within the technological areas, and second, regarding the integration of technologies into the medical, cognitive, and social context. This also includes the way technology acts within the life courses of individuals and societies, and the balance of the benefits that technology brings against perceived or actual medical, social as well as ethical drawbacks. Therefore, this workshop aims to bring together researchers and industry practitioners from different fields to share their research positions and practical experiences and discuss new ideas, innovative approaches and challenging research questions, which have the potential to motivate future research activities within the field of smart healthcare systems.

## Author Keywords

Human-Computer Interaction, Human-Centered Design, Ambient Intelligence, Health Care, Smart Services, Ambient Assisted Living, E-Health.

## INTRODUCTION

Within the last five to ten years a variety of new healthcare concepts for supporting and assisting users in technology-enhanced environments emerged (see, e.g., Jähn, 2003 or Tan, 2005 for an overview over state-of-the-art applications). These so-called e-health applications open up new possibilities for supporting diagnosis and therapy, by bridging temporal and spatial gaps between patients and physicians. Personal mobile devices enable autonomous and unobtrusive collection of clinical data and support the continuous transmission of physiological information between patients and remote healthcare providers (Leonhardt, 2005). For patients with chronic diseases, like, e.g., chronic heart failures or

diabetes, mobile e-health systems help to minimize hospital stays and in doing so enable an independent life in a domestic environment. Nevertheless, the complexity of e-health systems raises fundamental questions of behaviour, communication and technology acceptance. For example, users of future e-health systems will be increasingly characterized by diversity. Relying only on highly experienced and technology-prone user groups, which might have been typical users in the last decades, is not sufficient anymore (Czaja and Sharit, 1998; Ellis and Allaire, 1999). Rather, elderly users, users with a completely different upbringing and domain knowledge, and ill or handicapped people will have to use the systems. As previous research focussed mainly on information and communication technologies (Arning and Ziefle, 2007; Ziefle, 2008), there is a major need to understand in which way physical, emotional and cognitive abilities, caused by individual learning histories and health states, may impact the usage and acceptance of e-health technologies (Mellenhorst et al., 2007). Today, research activities in the e-health sector are dominated by professionals from engineering, natural sciences, informatics and medical sciences, who mainly concentrate on aspects of technical feasibility and medical treatment. But in order to fully exploit the potential of e-health applications, not only aspects of technical feasibility, but also acceptance and usability issues of e-health applications have to be carefully considered. In order to meet the needs of future user groups, an integrative and multidisciplinary approach is required, which combines engineering and medical knowledge with theoretical and methodological contributions of the humanities.

## WORKSHOP

The proposed workshop will be based on last year's event at OZCHI 2009 in Melbourne. For more information please see: <http://smarthealth.humtec.rwth-aachen.de>.

## Workshop Goal

The workshop aims to bring together researchers from different disciplines to discuss the interrelation of medical, environmental, technical, communicative, psychological and social factors and their consequences for the design, use and acceptance of smart healthcare systems.

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### Workshop Preparation

In the run-up to the workshop, the organizers will address fellow researchers to build up an international network based on different research activities. This allows collecting different theoretical and methodological perspectives on the topic prior to the workshop. It is expected that the personal contact will lead to a large number of high-quality submissions. As a long-term collaboration is an explicit goal of the workshop, the follow-up activities described below will be prepared and relevant material will be provided to all participants before the workshop.

### Workshop Schedule

With the preliminary structure of the workshop schedule different strategic goals are pursued. First, it is aimed to provide an opportunity for building up new research connections, fostering existing collaborations, and establishing long-term cooperation. Second, group work and discussion sessions are planned to support the exchange of new ideas, innovative approaches and challenging research questions, which have the potential to motivate future research activities within the field of smart healthcare systems. And finally, it is intended to provide enough time to consolidate individual research interests and plan different follow-up activities.

**Tab. 1.** Tentative Workshop Schedule.

Time	Activity
8:00 – 8:30	Welcome Introduction of Participants
8:30 – 10:30	Presentation of Position Papers Identification of Topics for Group Sessions
10:30 – 11:00	Mid-Morning Break
11:00 – 13:00	Group Work Sessions
13:00 – 14:00	Lunch Break
14:00 – 16:00	Presentation of Results from Working Groups Open Discussion
16:00 – 16:30	Mid-Afternoon Break
16:30 – 17:30	Presentation and Discussion (alternatively 2 hours slot for planning of follow-up activities)
17:30 – 18:00	Coordination of Follow-up Activities - Follow-up Workshop - Discussion of Potential Journal Publication

### FOLLOW-UP ACTIVITIES

The organizers explicitly aim at fostering a long-term collaboration among the participants of the workshop. In order to reach this goal different activities are planned.

### Workshop at OZCHI 2011

In order to provide researchers in the area of smart healthcare applications with an opportunity to exchange ideas, present ongoing research work and coordinate joint activities it is planned to establish an annual meeting at an renowned international conference. Through its inter-

disciplinary network of like-minded researchers the OZCHI conference series offers an ideal platform for such events. Therefore, it is planned to submit a proposal for a follow-up workshop at OZCHI 2011. To guarantee a well-balanced program and up-to-date research issues, the members of the workshop will be encouraged to bring up additional topics as well as important questions they would like to address in a forthcoming workshop. In addition, all attendees will be invited to participate in the planning and organization of the up-coming event.

### Joint Journal Publication

Selected papers of last year's workshop are currently being published in a special edition of the Electronic Journal of Health Informatics ([www.ejhi.net](http://www.ejhi.net)). Based on the quality of the workshop submissions it is planned to arrange a special edition with the editors of EJHI and invite the authors of 5 to 7 workshop papers to submit a revised version of their workshop contributions.

In addition, it is intended to summarize the results and insights gained during the workshop and write a joint paper addressing the core topics identified in the group work and discussion sessions.

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