

Editorial

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Interdisciplinary Research in Assistive Systems

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Dear Reader,

Sociotechnical artifacts that address issues of the demographic change demand an integrated research agenda and an interdisciplinary research scope. However, interdisciplinary research is oftentimes structurally and methodologically underrepresented in Germany. In order to address this, the Federal Ministry of Education and Research in Germany is funding eight interdisciplinary projects over the course of five years, that integrate researchers with a multitude of disciplinary perspectives. As such, these research groups follow two goals: they are incubators for interdisciplinary competence, as well as designers and developers of sociotechnical systems and services that tackle problems of the demographic change. It is our pleasure to present the current special issue with a selection of scientific papers and case reports about the divergent artifacts, processes, and methods that are developed by these research groups. Collectively these perspectives shed light on some of the opportunities as well as the pitfalls of interdisciplinary research and the challenges that come with the complex intertwinement of oftentimes diverging disciplinary perspectives.

The first contribution by *Graf et al.* evaluates a Human-Robot-Interaction study conducted during public science events in order to gain insights into the relevance of the “point of interaction” for successful and user-friendly interaction with a non-anthropomorphic robot.

The second article by *Protzak et al.* evaluates two user studies on pedestrian traffic behavior. The studies investigate the reaction times and errors made by the participants in simulated dangerous traffic situations. As such they generate knowledge for the development of an assistance system for older pedestrians.

The third contribution by *Schwarz et al.* describes the conception and development of a behavior change support system for health improvement for a target group in the age range of 50–65. The contribution shows how different scientific domains as well as prospective users were involved in the design process.

The fourth article by *Bleser et al.* focuses on the development of a system of inertial measurement units for accurately capturing joint kinematics to perform locomotion analysis for rehabilitation. The article presents results from three previous studies and correlates them with expert interviews with medical practitioners and movement scientists.

In the fifth contribution, *Berger et al.* discuss the role and implications of Research through Design in shaping open research agendas and interdisciplinary research.

Finally, three case studies conclude this i-com special issue.

The first case study by *Weidner et al.* introduces support relations as an approach for developing wearable systems for physical support and details exemplary supporting technologies. The contribution stresses the need to tightly integrate users into the development process to build intuitive and individualized wearable systems.

The second case study by *Altepost et al.* describes how an interdisciplinary methodical approach is used in the conception of a digital assistance system for the attendance of modern weaving machines. The proposed system is expected to increase the productivity by supporting complex work procedures and to accelerate the learning process.

The third case study by *Mertens et al.* presents and discusses the results of a longitudinal survey which evaluates the use of information and communication technology (ICT) by older adults (60+) in Germany. The study surveyed which ICTs and apps the participants used, how they use and trust health information and analyzed participants’ interaction with touchscreen devices.

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