

SFB/TR 8 Spatial Cognition / IQN Video Conference

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Bridging the Gap between Social Computing and Pervasive Computing: Synergies and Challenges

Societal challenges, such as assisted living for elderly people, create a high demand for technology able to emulate human-style interaction modes. Currently, most human-machine interfaces focus on input that is explicitly issued by human users. However, often it is the myriad of unconsciously conveyed social and psychological signals that will determine whether an interaction with a machine is successful or not. In my talk, I will demonstrate how progress made in the areas of social computing and pervasive computing can contribute to a deeper symbiosis in human-machine interaction by collecting subtle behavioral cues under naturalistic conditions and linking them to higher-level intentional states. However, on the way to this goal, a number of challenges need to be solved: Users show a great deal of individuality in their behaviors, and there is no clear mapping between behavioral cues and intentional states. This is in particular true for real-life settings where users are exposed to a more diverse set of stimuli than under laboratory conditions. Furthermore, it isn't obvious how to acquire ground truth data against which to evaluate the performance of system components that map unconsciously conveyed behavioral cues onto intentional states. Finally, we need to cope with limited resources when recording social and psychological cues in a mobile context and responding to them in real-time. Apart from technological challenges, psychological, societal and privacy issues need to be taken into account. Based on an analysis of recent activities in the areas of social computing and pervasive computing, I will outline a road map for future research.

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