

Gaze in situated interaction

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Spoken dialog systems have for a long time neglected the physical space in which the interaction takes place. Applications such as ticket booking over the telephone assume that the system interacts with a single user, and that the system and user are not physically co-located. Recently there has been a lot of interest in situating the interaction in a physical space where there might be several users talking to the system at the same time, and where there might be physical objects in the surroundings that the users and system might refer to. In face-to-face multi-party interaction, humans typically use head pose and gaze to signal attention and to regulate turn-taking. One of the major application areas where this becomes important is human-robot interaction. In this talk, I will present some of the research we have done at KTH in the EU-project IURO (Interactive Urban Robot) over the last years. As part of this project, we have developed a back-projected animated robot head, called Furhat. Using this head as a research tool, we have investigated how the 3D design affects the interaction in different multi-party dialogue settings, and which factors affect humans perception of the target of the robot's gaze.