

Redesigning the Tangible Interactive Window for Older Adults: a System for Breaking Social Isolation

Summary of the project

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MOTIVATION

While telecommunication technologies allow the majority of people to be in touch with their distant relatives, older adults are often not able to use these technologies because the interface and the proposed functionalities are not adapted to them. Nevertheless, communication technologies could help ageing well by breaking the social isolation and by proposing social activities and games that could help coping with the onset of cognitive disorders.

GOALS

The main goal of this project is the adaptation of a state of the art technology to make older adults communicate with their relatives in a natural and immersive manner that do not require learning particular computer skills. Indeed, the interface should build on their previous knowledge of the existing world, requiring little or no effort to communicate through the proposed system. Moreover, the system should offer also additional functions useful for older adults in order to increase the desirability of the product and to keep high the engagement during the usage.

EXISTING PROJECT DESCRIPTION

The HumanTech Institute of the University of Applied Sciences and Arts Western Switzerland in collaboration with the ESTIA French University is developing a videoconferencing system that exploits the tangible affordances of a human-size window to facilitate the interaction with a state of the arte multiparty videoconferencing protocol (WebRTC). Indeed, the Tangible Interactive Window tries to lower the threshold for social exchanges by offering the same interaction possibilities of a real window, but in a mixed reality context. For example, the user can close its digital blinds through a physical crank handle rod, open/close the digital audio stream by opening/closing the physical window and write on digital post-its directly with her finger. So far, three prototypes have been built to put in communication two research team, one in Fribourg (Switzerland) and one in Bidart (France), with the original goal to foster the collaboration between them. During the project, several stakeholders for older adults' well-being suggested that the Tangible Interactive Window could be particularly interesting for this category of people.

PROJECT PLAN

The goal of this project is to adapt the existing system of the Tangible Interactive Window to older adults' needs. Although the basic function of the Tangible Interactive Window are already quite intuitive, a consistent effort is still needed to adapt the additional functions currently available in the system, as well as to implement new functions that can be particularly useful for older adults. In order to understand their needs in relation to this system, a Tangible Interactive Window will be installed in a retirement home. Moreover, a mobile version of the communication system that could be installed in a smartphone will be developed in order to allow family members to communicate with their older relatives without the need of an expensive setup. Additional improvements and applications for the Tangible Interactive Window will be investigated together with older adults and their stakeholders. Among the envisaged improvements we will investigate the possibility to display live webcams of remote landscapes (mountains, sea, cities, etc.) as well as to explore the outside world through a simplified Google Earth application. Moreover, in order to make the usage of the Tangible Interactive window more immersive, a multisensory experience including weather and smell simulation of the remote place will be implemented and tested with older adults. With the same purpose of reducing the perceived distance between people communicating through the window, the sharing of physical objects through a 3D printer/scanner will be investigated.

EXPECTED OUTCOMES

Working in collaboration with a multidisciplinary organization with several contacts with older adults' stakeholders, i.e., the Senior Living Lab, it is expected a system that will fit the older adults' needs and that can have an effective impact on the society thanks to the involvement of business entities and associations that could be interested in this project.