THE DESIGN, DEVELOPMENT, AND EVALUATION OF AN USABLE AND PRIVACY-ENHANCED TELEPRESENCE INTERFACE FOR OLDER ADULTS

ABSTRACT

Maintaining health and wellness while aging-in-place independently is crucial for older adults. Telepresence technology can be potentially beneficial for this target population to stay socially connected. However, this technology is not specifically designed for older adults. For this target population to adopt such technology successfully, it is important to ensure that they do not experience usability barriers. This research uses HCI/HRI concepts and technology design principles for older adults to design, develop and test telepresence user interfaces (UI). This addresses the following research questions: 1): What are the essential usability and privacy-enhanced features needed to inform the design and development of a new telepresence UI for aging population? 2): Is the new telepresence UI perceived as more usable and private by older users compared to traditional telepresence UI design?

Thirty older adults aged above 60 in South Carolina and Georgia participated in a within-subjects user-testing with two UIs: 1) a generic UI called Presence designed based on currently available telepresence robots; and 2) a privacy-enhanced usable telepresence UI named InTouch. Participants tested both UIs in a virtual home environment developed in Unity.

Results of this study suggest that older adults perceived InTouch to be more usable and private. This study provides insight on what usability and privacy features are critical for the aging population to use such telepresence technology. By investigating the design of telepresence robots for older users, and applying those findings to design recommendations, the final goal is to improve the ease of use and privacy level of telepresence robots – not only for our target users, but for all users who wish to enhance their social connectedness.