



2013

Visualization of residents in long-term care centres through mobile natural user interfaces (NUI)

Arunachalan, Bhuvanewari and Diamond, Sara and Stevens, Anne and Talaie, Borzu and Ghaderi, Maziar

Suggested citation:

Arunachalan, Bhuvanewari and Diamond, Sara and Stevens, Anne and Talaie, Borzu and Ghaderi, Maziar (2013) Visualization of residents in long-term care centres through mobile natural user interfaces (NUI). In: IEEE Symposium on Large-Scale Data Analysis and Visualization (LDAV). Available at <http://openresearch.ocadu.ca/id/eprint/1535/>

Visualization of Residents in Long-Term Care Centres through Mobile Natural User Interfaces (NUI)

Bhuvanewari Arunachalan, Sara Diamond, Anne Stevens, Borzu Talaie, Maziar Ghaderi, OCAD University, Toronto

Abstract

In this poster, we present a set of NUI designs towards creating a social media platform for caregivers, which integrates automated analysis methods and natural interaction techniques to enable caregivers to capture, store, visualize, and analyze both formal data and informal information. Our research will evaluate whether NUI's make a difference in supporting long-term caregivers.

Background

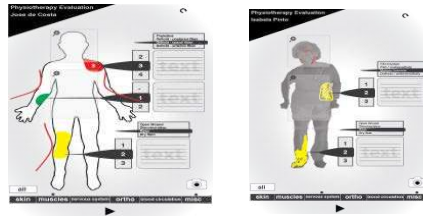
This research work is part of a collaborative project with a special chronic long-term care hospital in Brazil (CAIS) for individuals with neurological and brain disorders. Our aim is to investigate how NUIs can be designed to enhance natural interaction among health professionals that leads to a more connected, informed and active community, with specific attention to designing for managing and visualizing large quantities of resident care data within the nomadic context of their work.

Discussion

Designs were presented to visual analytics professionals during a workshop on designing visual analytics tools for mobile healthcare platform, which was conducted at Canadian Visual Analytics Summer School - CANVAS2013, Dalhousie University, July 15 - 19, 2013. Discussion focused on the interface techniques employed – whether NUI facilitate data analysis and integration of knowledge and how difficult it would be to learn each of these interfaces.

Natural User Interface (NUI) Designs

Prototypes



Features

- ❖ Touch-based interactions
 - ❖ Patient record management
 - ❖ Information sharing
 - ❖ Staff communication
 - ❖ Location proximity
 - ❖ Visualization of changes in residents over time based on formal data
-
- ❖ Motion sensor-based interaction
 - ❖ Collaborative workflow
 - ❖ Participatory work process
 - ❖ Staff communication
 - ❖ Health record tracking using simple movements
 - ❖ Multimedia data processing
 - ❖ Visualization of changes in residents over time based on informal data
-
- ❖ Sketch-based interaction
 - ❖ Body structure canvas
 - ❖ Informal data capturing – physical health, emotions, behaviour, and mental health
 - ❖ Multimedia dataset – capture, store, and retrieve text, photos, and videos
 - ❖ Visualization of changes in residents over time based on informal data

References

[1] D. A. Keim, J. Kohhammer, et al. (Editors), "Mastering the Information Age - Solving Problems with Visual Analytics", Eurographics, 2010.
 [2] Weiyuan Liu, Natural user interface- next mainstream product user interface, In proceedings of IEEE 11th International Conference on Computer-Aided Industrial Design & Conceptual Design (CAIDCD), 203-205, 2011.

Acknowledgement

We thank our funding agencies: MITACS and BOEING for their support. We thank CAIS hospital staff, CIV-DDD, BRAVA team members, and our colleagues, Dr. Steve Sziget, and Dr. Fanny Chevalier for their help and insight with this project.