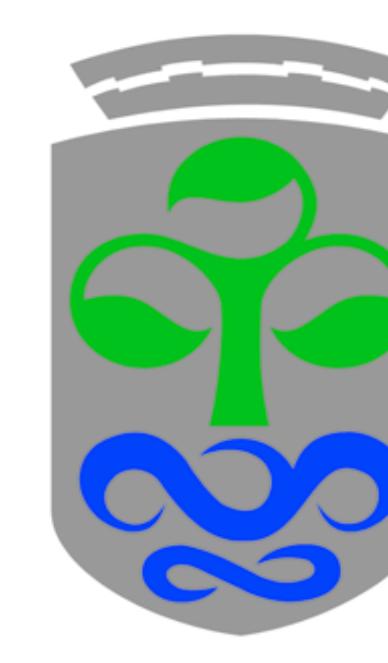


CONTRIBUTION TO HOMECARE SYSTEMS FOR OLDER ADULTS THROUGH ITV

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1 Motivation of the work

In Mexico, many seniors are alone for most of the day or live in public nursing homes. Aging is related to the accumulation (during the lifetime elapsed) of genetic faults in cells and organs; in some cases, augmented by additional factors, such as: diet, lifestyle and diseases [1]. It is considered, that for elders, is necessary to provide simple interaction with computer systems [2]. They often left outside technological tools because these were not designed to support the natural changes that older adults face due to ageing [3], and elderly people typically show rejection of new technologies at home, either because the lack of support to their natural disabilities or the lack of perceived utility [4]. This thesis propose to explore a medium well known by seniors such as the television set (TV). TV is a standard device with an extensive home penetration and impacts in practically all scopes from the point of view of the information, entertainment and education [5, 6].

2 Objectives

Design, development and evaluation of a home care platform for older adults using interactive television technologies in order to improve their technology adoption.

Specific objectives

- 1.Understanding older adults needs.
- 2.Requirements specification.
- 3.Identify appropriate technologies for the development of interactive television applications.
- 4.Field evaluation of the platform.

5 Results & discussion

[Objectives 1-2] Based on surveys with 500 older adults and the analysis of the context the requirements were identified.

[Objective 3] A heuristic evaluation study performed through expert review to an early prototype (Android TV app) to make sure that the requirements identified after the contextual study were included in a user-friendly manner to older adults. Heuristics were an efficient method for finding problems with the system and allowed significant improvements in the interaction with the software.

Santana, P. C.; Anido, L. E. Heuristic Evaluation of an Interactive Television System to Facilitate Elders Home Care. *IEEE Lat. Am. Trans.* **2016**, *14*, 3455–3460. (Published)

[Objective 4] After addressing and resolving the findings of the heuristic evaluation, an improved platform was built (iTVCare). An assessment of technology adoption and user experience of the system was performed through a pilot test with a group of 50 seniors living in nursing homes in Mexico.

Santana, P. C.; Anido, L. E. The technology acceptance of a TV platform for the elderly living alone or in public nursing homes . *Int. J. Environ. Res. Public Health* . **2017**. (Published)

The findings confirmed that older adults showed a strong intention of use towards a television-based platform to provide wellbeing.

During last year, we focused on nursing homes environment to understanding the needs of older adults groups (not only individuals) to inform an inclusive design of a set of guidelines to improve the interaction design of television applications to be used by a collective of elders.

Santana, P. C.; Anido, L. E. A Systematic review of television applications in the homecare field in nursing homes. **2018**. (In writing)

Santana, P. C.; Anido, L. E. Design guidelines for interactive television applications for older adults groups. **2018**. (In writing)

3 Research plan

- Contextual study:
 - Identify people that will use the platform and gathering real data on the user context.
- State of the art review:
 - Comprehensive literature review in care systems, technological platforms and ageing.
- Requirements gathering:
 - Identify all the requirements needed to be successful with the product.
- Implementation:
 - Build a prototype of the iTV platform.
- Evaluation of usability and technology adoption of the proposed iTV platform by older adults.
- Results dissemination through publications in journals.

4 Next year planning

- Reporting results of the guideline's design and the guidelines to improve creation of television apps for use in nursing homes.
- Send two research papers with the results, currently in writing stage.
- Writing PhD memory as compendium of articles.
- Dissemination of final results in an international conference.
- Defense of Doctoral Thesis.

6 References

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