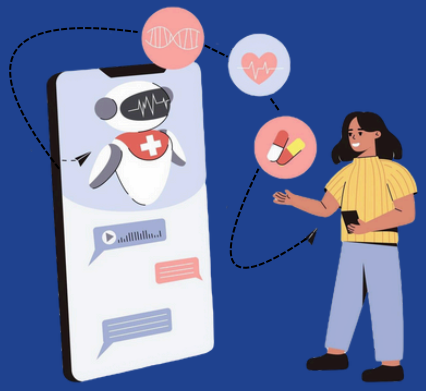
Who We Are

Background

MAmI Research Lab at the University of Castilla-La Mancha (UCLM), is a research group that focuses on Interactive Systems and Ambient Intelligence. The main efforts of the group are concentrated on health and wellbeing.

MAmI specializes in creating intelligent, personalized technology solutions for health through a combination of embedded sensors, mobile computing, neuroscience, and interactive applications. We tackle significant challenges in health monitoring and life quality improvements. MAmI Lab has contributed to numerous national and international projects in areas such as Ambient Assisted Living (AAL), Alzheimer's diagnosis and support, mobile monitoring of chronic and non chronic diseases, support in daily activities, frailty, gait analysis, and cognitive rehabilitation.



Intelligent transformation of the ADL-based caregiving process and its intervention with digital solutions

AmI Research Lab

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TAICare

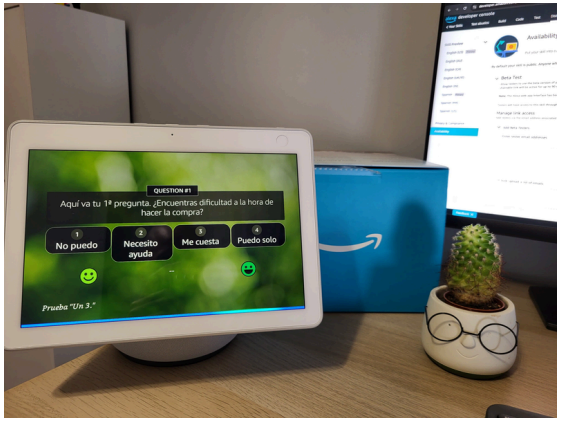
Universidad de Castilla-La Mancha

MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

AGENCIA ESTATAL DE INVESTIGACIÓN

Project

In this project, Conversational Assistants (CAs) and Connected Devices (CDs) in the home collect important data from users' interactions. This data is then analyzed using artificial intelligence (AI) to detect abnormal behaviors at early stages in daily living tasks, which may indicate potential cognitive impairment. Additionally, digital solutions are designed to support daily life activities and enhance long-term caregiving, ultimately aiming to improve quality of life in a more sustainable and innovative way.



TAICare in a nut shell

Main Objective:

The aim is to improve the quality of life for elderly individuals living alone at home, as well as their caregivers, by using smart plugs and CAs to detect abnormal behaviors during Activities of Daily Living (ADL) performance.

The daily routines analysis allow us to know deviations in activities carried out at home by seniors over time. It helps us to detect mild cognitive impairments at early stages.

The project includes the following contributions:

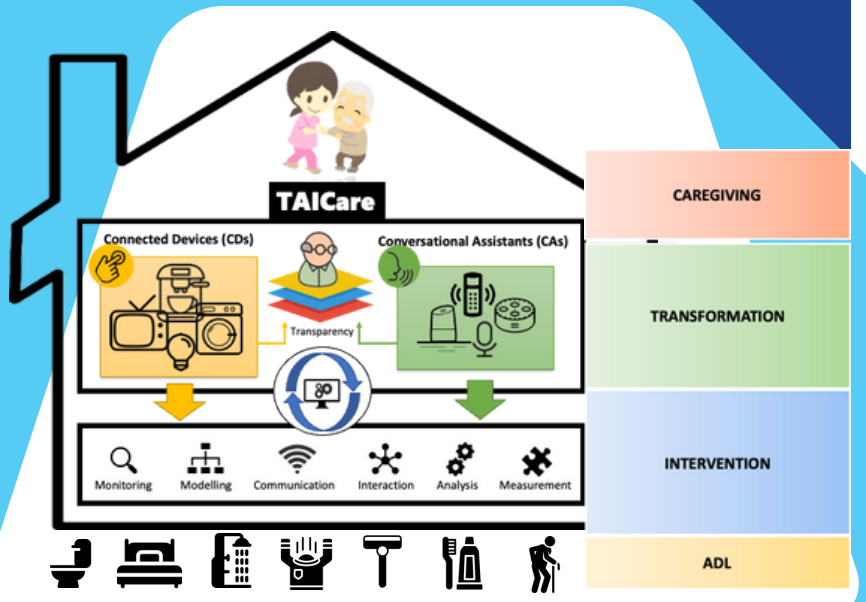
- A system for information gathering from daily activities of elderly people
- Reliable tools to help guide and assess the intervention on elderly individuals by clinicians and therapists
- Open datasets generation from both basic and complex daily activities monitoring
- A real impact on modernizing caregiving, making it easier to track and measure daily activities.

These efforts are all aimed at creating a more supportive, effective caregiving experience that benefits both elderly people and those who care for them.

Results

ADL-based multi-modal data acquisition

Open datasets on ADL monitoring

ADL intervention and analysis of seniors

Digital transformation of caregiving