

Empowering People Living with Dementia in Smart Home



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GOODIES
Research Group on Development
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MOTIVATIONS

- Dementia forecasts: 1M by 2025 in UK.
- People with dementia (PWD) lose autonomy and independence. 45% living at home.
- Continued care is expensive and emotional taxing for carers.
- Social Health high expenses.

STATE OF THE ART

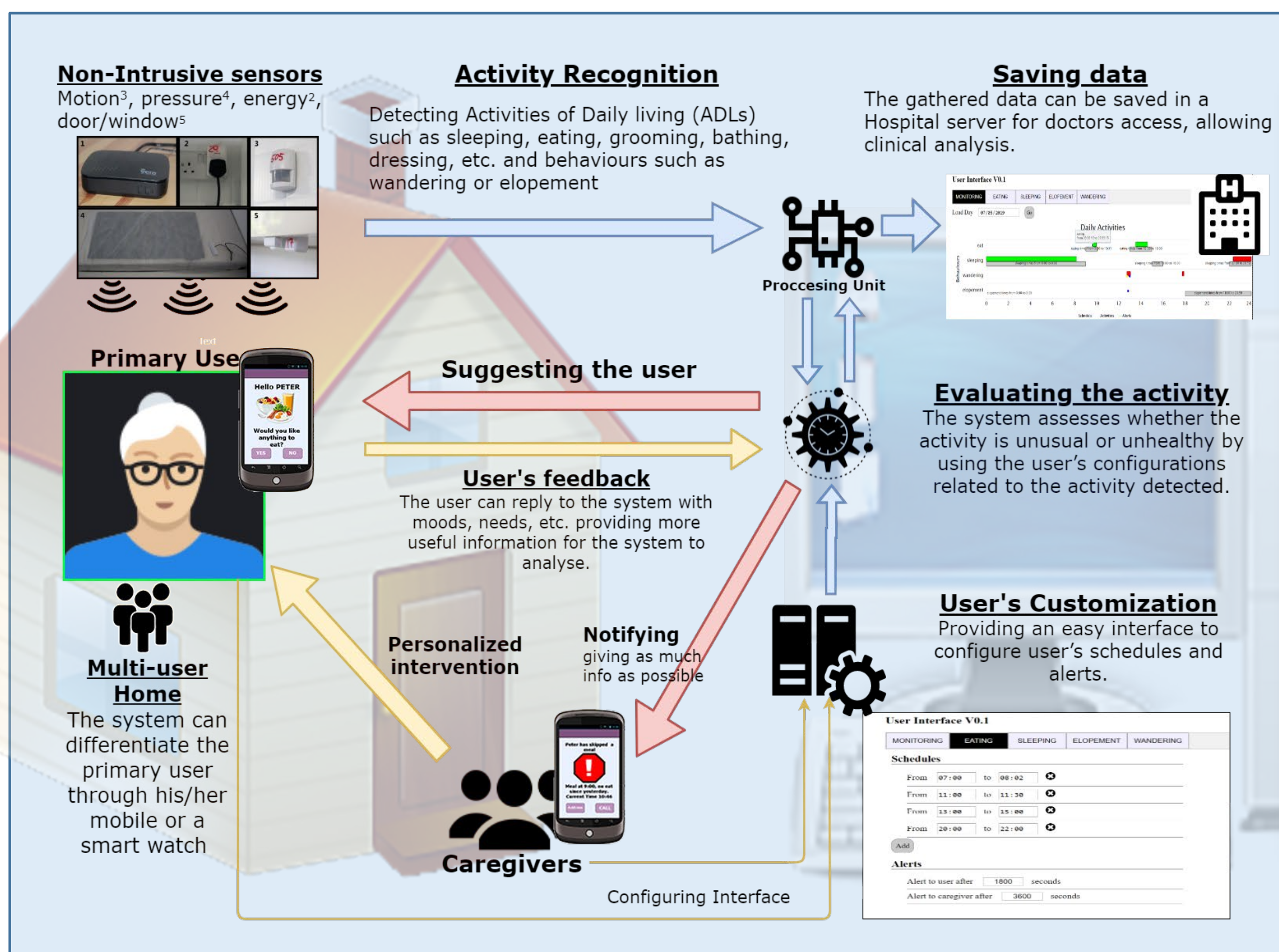
- Ambient Assisted Living (AAL) focus on the elderly.
- Real-time Activity Recognition(AR) using non-intrusive sensors.
- The large variety of low-cost sensors.
- Huge range of devices to interact with users.

GOALS

- ❖ Delaying placement in a care home avoiding stress of PWD.
- ❖ Supporting PWD living at home allowing their self-sufficiency.
- ❖ Reducing the caregivers' stress due to a continuous care.
- ❖ Maintaining user's safety derived from continuous monitoring.
- ❖ Reducing the cost in the early stages of dementia.

ACHIEVEMENTS

- ❖ Detecting user's activities at home
- ❖ Assessing activities and behaviours according to the user's settings.
- ❖ Providing an interface to configure schedules and alerts.
- ❖ Coaching the user through mobile in case an unusual behaviour or activity is detected.
- ❖ Keeping the caregiver informed through mobile in case the user does not amend the behaviour.
- ❖ Storing ADL's info in a server for doctors' analysis and evolution.
- ❖ Differentiate the user's activity from others dwellers.



FUTURE WORK

- Testing the system with people living with dementia
- Incorporating more type of sensors to get more precise information and adding other ADLs and behaviours
- Designing APP and user's interface guided by Co-design.
- Evaluate the different ways of interacting with the user
- Guiding the user to carry out Activities Daily Living (ADL).

TESTING & VALIDATION

- Deployed and tested at Middlesex University's "Smart Spaces Lab".
- The initial tests have provided good outcomes detecting activities as sleeping, eating or wandering, and interacting with user and caregiver.
- Currently, the research is focused on long-term testing.

Watch some research video demos in <https://qrs.ly/x79zbaq>

References

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