

Improving the environment of people with dementia with the help of new software

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Can we improve the living environment of people with dementia with software and smartwatches? For two years, Daniela Gawehns did research in a care facility for people with dementia as part of the project

"Dementia back in the heart of society." This way, she tried to find out whether an open living environment leads to a better quality of life.

Gawehns develops new data mining techniques to examine various data and extract interpretable information from it. The collected data comes from various sources such as completed questionnaires, findings of staff, but also from the movement patterns of residents.

In order to record these movement patterns, Richard van Dijk and Joost Visser of the LIACS Software Lab developed special software. This so-called WEARDA software package collects data via a smartwatch to track the activities of individuals. This way, they can study the activity patterns of people with [dementia](#). "The interesting part of this software is that it gives access to raw sensor data that is usually hidden and not shared with the user," Gawehns explains.

Privacy sensitive data

The software can record at an extremely high rate accelerometer data and record GPS data without having to send it through several servers. This also makes it useful for applications that are working with [privacy-sensitive data](#), because they are better protected. "It allows us to collect data not only about the activity levels of residents, but also about their whereabouts outside, on the nursing home grounds, says Gawehns. "Besides this, it allows us to gain insight into how people are using the gardens and how active they are outside. Without this software in combination with a consumer wearable, this would not have been possible."

The WEARDA software is freely available for other researchers who want to use wearables like smartwatches for their research. A comprehensive manual and the [software](#) can be found here on [GiHhub](#).

Provided by Leiden University

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