AI4HOPE

Newsletter 4

September 2026

Transforming Dementia Care:

Integrating Innovation, Evidence, and Digital Solutions for Holistic Support in Europe

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Funded by the European Union

Acknowledgment: Funded by the European Union (AI4HOPE, 101136769). Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the Health and Digital Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.
This work was funded by UK Research and Innovation (UKRI) under the UK government's Horizon Europe funding guarantee [Grant No. 101136769].

From What Matters to What Works: Co-Creating AI for Dementia Care

AI4HOPE aims to develop AI-supported tools that can contribute to the emotional wellbeing of people with dementia and support earlier, person-centred conversations and decisions about future care.

From the beginning, this has meant more than developing technology: it has meant understanding what matters to people and how digital support might fit into their everyday lives and care. Across four co-creation sprints in Germany, Ireland, Slovenia, Spain, Portugal and the United Kingdom, people with dementia, family caregivers and healthcare professionals contributed alongside researchers and technical partners. Their involvement evolved with the project: from exploring lived experiences, needs and values, through engaging with increasingly tangible concepts and prototypes, to reflecting on how emerging solutions could meaningfully fit within everyday care. Each cycle built on previous learning, allowing both the technologies and the co-creation process itself to be progressively adapted to participants, contexts and evolving implementation realities.

However, meaningful participation does not happen simply by bringing people into a room. Before the first sprint, AI4HOPE partners worked with Alzheimer Europe, drawing directly on the perspectives of people with dementia and caregivers, to develop shared co-creation guidelines. These helped local teams create supportive, accessible and adaptable conditions for participation, with flexibility to adjust language, pace, materials and ways of taking part according to participants' needs and local contexts.

At the heart of this process was a simple but essential principle: the people whose lives may be affected by these technologies must have a meaningful voice in shaping them: "Nothing about us without us."



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The early co-creation activities focused on understanding lived experiences, unmet needs and what people valued in their everyday lives and care. Through different participatory exercises, people with dementia, caregivers and professionals explored experiences, emotions, relationships and expectations for future support. This helped identify not only where difficulties existed, but also what people wanted to preserve, including autonomy, identity, reassurance and meaningful relationships. These insights helped guide the concepts and requirements explored as the project moved forward. As concepts and prototypes became increasingly tangible in subsequent sprints, the focus also evolved.

Participants could engage more concretely with the emerging solutions, identifying issues around accessibility, confidence, privacy, emotional appropriateness and the human support that may be needed around technology use. This helped move co-creation from exploring what people might need towards understanding how emerging solutions could work meaningfully in everyday life.

By the final sprint, the focus had expanded beyond refining the technology itself. Healthcare professionals reflected on how digital solutions could realistically fit within dementia care, bringing questions of dignity, autonomy, communication, relationships and care realities into considerations about future use. This highlighted that meaningful innovation depends not only on the characteristics of a tool, but also on the people, relationships and care environments surrounding its use.

Across these different stages, values remained a connecting thread. Dignity, autonomy, trust, identity, emotional wellbeing and meaningful human relationships repeatedly shaped how emerging solutions were considered. Technology was seen as valuable when it could support what matters to people, such as autonomy, communication, decision-making or reassurance, without adding unnecessary burden or replacing the human relationships at the heart of care. The four co-creation sprints show the value of co-creation as an evolving process rather than a single step in technological development. By bringing together lived experience, professional knowledge, research, and technical expertise over time, AI4HOPE has been able to progressively explore not only what the technologies should do, but also what may be needed for them to be meaningful and appropriate within real dementia care. Ultimately, meaningful co-creation is not about asking people what they think of a technology. It is about allowing their experiences, values and changing realities to shape the journey, so that innovation evolves not only towards what technology can do, but towards what truly matters in people's lives and care.



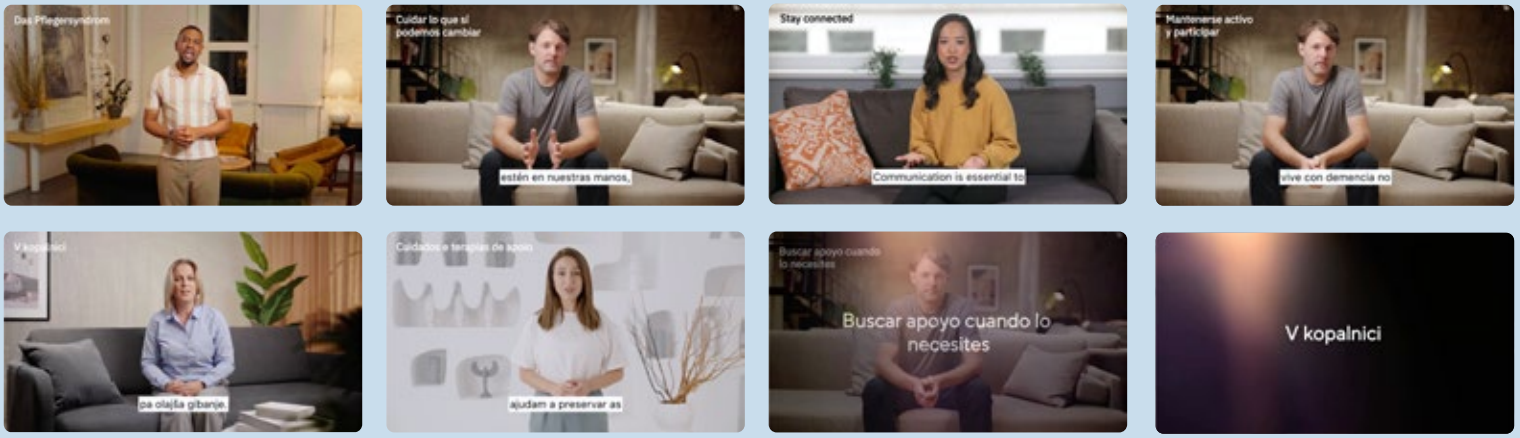
Connecting People, Disciplines and Innovation

For Vera, a clinician and project partner from the University Hospital of Bonn, AI4HOPE demonstrates the value of bringing together people with different professional, personal and cultural perspectives. The consortium's diversity encourages collaboration across disciplines and countries, helping partners consider the needs of people with dementia and their caregivers from multiple points of view.

Vera highlights an important balance at the heart of the project: digital tools should complement, rather than replace, personal interaction. From her clinical perspective, careful evaluation and meaningful integration into existing care practices are essential if new technologies are to provide genuine, practical benefits. Her reflections capture AI4HOPE's broader ambition: combining technological innovation, clinical experience and international cooperation to develop tools that are responsible, useful, and centred on the everyday needs of patients and caregivers.

"I appreciate being part of the AI4HOPE research consortium. It feels like a colourful potpourri! We are a bunch of colleagues from 13 European countries with very diverse professional, personal, and cultural backgrounds. This broadens how we think and work together. I collaborate not only with clinicians from other fields, but also with IT specialists, project managers, researchers from the natural and social sciences, and policy experts." Projects like this really help sustain meaningful interaction across disciplines and borders!

The digital tools of AI4HOPE are supposed to support patients with dementia and their caregivers in daily life and decision-making. As a clinician, I know how challenging these situations can be. I am more of a hands-on practitioner - who highly values personal interaction – and I do have a careful take of digital tools... But interestingly, these tools may actually support patients interacting. Thorough evaluation and meaningful integration of interventions into care are essential. In that sense, our researcher potpourri is engaged in the AI4HOPE project to have practical benefits for patients and their caregivers."



AI4Hope Launches Multilingual *Educational Videos* on Dementia

Making trusted dementia information clearer and more accessible

AI4Hope is pleased to present a new series of educational videos designed to make reliable information about dementia easier to understand and access for people living with dementia and their caregivers. Developed for the AI4Hope Digital Companion, the videos were created by partner **ITCL Technology Centre**, and are based on brochures, infographics and other resources selected by clinical partners from leading Alzheimer's associations in Ireland, the United Kingdom, Germany, Portugal, Spain and Slovenia.

Generative AI tools supported the preparation and translation of the scripts and the creation of avatar-led videos. To ensure quality and trustworthiness, all content and language versions were carefully reviewed and approved by consortium partners who are experts in dementia care and native speakers. The information is presented in short, clearly structured sections, using accessible language, measured pacing and audiovisual cues to support comprehension. The avatars were also selected with approachability, inclusiveness and natural communication in mind.

With the permission of the organisations that produced the original materials, the videos are now available on the AI4Hope YouTube channel. Each video acknowledges its source and is published under a Creative Commons CC BY-NC-ND 4.0 licence.

We gratefully acknowledge the participation of the Alzheimer's associations who collaborated:
Pasqual Maragall Foundation / Alzheimer's Society UK / Deutsche Alzheimer Gesellschaft / Associação Alzheimer Portugal / Alzheimer Society of Ireland / UKC Maribor Hospital

Where You Can Meet Us



36th Alzheimer Europe conference

27 to 29 October 2026
in Dublin, Ireland

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The 21st EAPC World Congress

20 to 22 May 2027 in
Glasgow, Sctoland

Read more



AI4HOPE Launches Multinational Pilot Studies

The daily burden of pain and other symptoms experienced by people with dementia are frequently under-recognized, often leading to delayed integration of palliative care and advance care planning. AI4HOPE is exploring how artificial intelligence and digital health technologies can create earlier, more personalized supportive care pathways for individuals living with dementia.

In this context, two parallel AI4HOPE project pilot studies are currently being conducted across six European clinical research centres: Bonn (Germany), Cork (Ireland), Leeds (United Kingdom), Porto (Portugal), Maribor (Slovenia), and Valladolid (Spain). Eligible participants include individuals with mild to moderate dementia (MoCA ≥ 16) who reside either at home or in residential care settings and have adequate social support. Each pilot aims to recruit 150 people living with dementia and up to 150 caregivers, yielding a total cohort of 300 participants per study.

Pilot Study 1 develops and tests a standardized symptom-assessment toolkit alongside a digital, self-directed intervention platform delivering evidence-based strategies for common dementia symptoms. Participation lasts seven days, with an optional extension of up to 30 days.

Pilot Study 2 evaluates an AI-driven chatbot that provides tailored dementia care support, assessing personal preferences to individually tailor advanced care planning decisions. The core participation period is seven days, extendable up to 90 days.

Both pilot studies launched in June 2026, with initial recruitment already successfully underway. Through symptom assessment and enabling proactive, AI-supported care planning, AI4HOPE demonstrates how digital innovations can empower people with dementia, alleviate caregiver strain, and integrate supportive care principles earlier into routine practice. The project addresses a critical gap in dementia care by shifting support from reactive to proactive models, leveraging AI to personalize interventions without increasing cognitive load.

The findings will provide a robust evidence base for future randomized controlled trials and help shape policy frameworks for scaling digital health solutions for people living with dementia.



8th International Seminar on Palliative Care

At the Internacional Seminar on Palliative Care on May 29, 2026 in Porto, Portugal, the Dementia Journey Companion (DJC), developed within the AI4HOPE project, was presented as an innovative, person-centred digital solution designed to support people living with dementia, their informal caregivers, and healthcare professionals throughout the disease trajectory. The presentation highlighted the platform's potential to facilitate communication, preserve personal identity and life narratives, document individual preferences and care priorities, provide accessible evidence-informed education, and support the assessment of emotional well-being and health-related quality of life. By integrating artificial intelligence with life-story work, preference elicitation, educational resources, and validated patient-reported outcome measures, the DJC may contribute to more personalised, participatory, and anticipatory dementia care, while promoting autonomy, dignity, shared decision-making, and quality of life.



AI4HOPE Team Visits DNPG Daily Care Centre in Žalec for User Testing Workshops

Our colleagues Valentino Šafran, Izidor Mlakar and Zala Meklav spent the day at the DNPG Daily Care Centre in Žalec, where they carried out usability testing and co-design workshops with people living with dementia and their caregivers.

The sessions focused on the Dementia Journey Companion, an AI-supported app being developed within the AI4HOPE Project to help people living with dementia and those supporting them to manage everyday challenges, preserve personal stories, and access relevant information.





Testing the app in a real care setting gave us a much better understanding of how it fits into daily life. Participants shared honest feedback, practical suggestions, and valuable perspectives on what works well and what could be improved.

These conversations are an essential part of the development process, helping us ensure that the Dementia Journey Companion is shaped by the people who will ultimately use it.

AI4HOPE Project Presented at Seminar on Dementia and Older Adults in Portugal

AI4HOPE Project partner Joana Briga from UP, participated as a speaker at the seminar "The Older Adult in Dementia", held at the Bairrada Wine Museum in Anadia, Aveiro, Portugal.

The event brought together professionals, researchers, and stakeholders to discuss the challenges associated with ageing, dementia, and person-centred care for older adults. It provided an excellent platform for knowledge exchange, reflection, and interdisciplinary dialogue.

During the presentation, the academic and scientific contributions developed within the AI4HOPE Project in the field of dementia were highlighted, emphasizing the importance of research, innovation, and digital solutions in supporting more humane, inclusive, and person-centred approaches to dementia care.

The seminar offered valuable insights into current challenges and future opportunities related to ageing populations and dementia care. The discussions reinforced the need for continued collaboration between researchers, healthcare professionals, caregivers, and policymakers to improve the quality of life of people living with dementia.

We are grateful for the invitation and the opportunity to contribute to this important initiative. Participating in such events strengthens the AI4HOPE Project's commitment to advancing innovative solutions that support older adults, caregivers, and healthcare systems across Europe.





AI4HOPE Partners Present "Wearable Sensors and Machine Learning for Detecting Freezing of Gait in Parkinson's Disease" at the 40th ECMS International Conference on Modelling and Simulation

Freezing of Gait (FOG) is a common motor symptom in Parkinson's disease, where a person may suddenly have difficulty starting or continuing to walk. These episodes can be short and unpredictable, so they may not always happen during a clinical visit. This makes FOG difficult to detect and monitor. It can also affect daily activities and increase the risk of falls.

In this study, we investigated whether wearable sensor data and machine learning could be used to automatically detect FOG episodes. We used a publicly available dataset containing 3D accelerometer data collected from the lower back of people with Parkinson's disease in home-based settings. The dataset includes different types of FOG events, such as start hesitation and freezing during walking and turning. In our analysis, we mainly focused on freezing during turning.

We tested several machine learning methods and evaluated the models using both subject-dependent and subject-independent settings. In the subject-dependent evaluation, the Decision Tree model achieved an F1-score and recall of 99%. In the more realistic subject-independent evaluation, where the model was tested on people whose data were not used during training, LightGBM achieved an F1-score of 80.9% and a recall of 93.4%.

These results show the potential of combining wearable sensors and machine learning for automatic FOG detection. In the future, similar approaches could support continuous monitoring of gait symptoms in daily life and provide more objective information about changes in Parkinson's motor symptoms.



This work was supported by the AI4HOPE project and was conducted by Ayse Kosal Bulbul, Muhammad Irfan, Maria K. Jaakkola, Riku Klén, and Abdulhamit Subasi. The work was presented at ECMS 2026, University of Agder (UiA), Grimstad, Norway, 23–26 June 2026, by Maria K. Jaakkola.

New AI4HOPE Publication on Wearable-Based Emotion Recognision

A new scientific publication from the AI4HOPE project has been published in IEEE Transactions on Instrumentation and Measurement. The systematic review, "Wearable-Based Emotion Recognition Using Electrocardiogram and Galvanic Skin Response and Instrumentation Audit: A Systematic Review," was authored by the team of University of Turku: Ayse Kosal Bulbul, Muhammed Irfan, Maria K. Jaakkola, Abdulhamit Subasi, and Riku Klén.

The article reviews research on wearable-based emotion recognition using electrocardiogram (ECG) and galvanic skin response (GSR) signals and includes an audit of the instrumentation used in the reviewed studies.

Read the publication

