visuAAL

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

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1. Introduction

The visuAAL (Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living) project represents a groundbreaking initiative aimed at addressing the challenges posed by video-based Active and Assisted Living (AAL) technologies. Funded under the European Union's Marie Skłodowska-Curie programme, visuAAL has sought to bridge the gap between user needs and the secure, ethical deployment of video-based systems for improving the health, well-being, and independence of older adults. Running from September 2020 to February 2025, this multidisciplinary project has brought together researchers, industrial partners, and stakeholders from diverse fields such as computer science, healthcare, law, sociology, and business.

At its core, visuAAL has focused on developing privacy-aware solutions that enhance the acceptance of video-based AAL technologies while addressing critical ethical, legal, and societal concerns. The project has tackled issues ranging from data protection under frameworks like the GDPR to algorithmic fairness and user acceptance. By incorporating privacy-by-design principles, visuAAL has aimed to alleviate fears of surveillance and misuse often associated with video-based monitoring systems. This approach is paramount to ensure that these technologies are not only effective but also respectful of users' rights and dignity.

This document compiles the research outputs produced by visuAAL's researchers during the project's execution. These publications span journal articles, conference papers, book chapters, and other contributions that reflect the breadth and depth of the project's achievements. The works presented here not only advance scientific knowledge but also provide practical insights for stakeholders involved in designing, deploying, and regulating AAL technologies.

An essential aspect of the visuAAL project has been the collaborative efforts among its researchers, whose diverse expertise and interdisciplinary approaches have led to innovative research outcomes. The synergy created within this network has not only enriched individual projects but also advanced the collective understanding of how to design and implement AAL technologies that are both effective and ethically sound.

To ensure broad dissemination and accessibility of the knowledge generated during the visuAAL project, all scientific publications have been made openly available through dedicated platforms. A community has been created on Zenodo[1], a trusted open-access repository, where the project's research outputs can be freely accessed

[1] https://zenodo.org/communities/visuaal (last access: 27/02/2025)

by researchers, practitioners, and the general public. This community serves as a centralized hub for sharing the outcomes produced by visuAAL's researchers. Additionally, these publications are also accessible via the project's website[2] under the "Scientific Publications" section. By providing open access to its research, visuAAL highlights its commitment to transparency, collaboration, and the advancement of science, ensuring that its contributions can inform future developments in AAL technologies.

[2] https://www.visuaal-itn.eu/outcomes/scientific-publications (last access: 27/02/2025)

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4. Books

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Maidhof, C. (2025). Privacy and Acceptance Perceptions of Video-Based Ambient Assisted Living Technologies. HCI-series, Apprimus. Aachen, Germany.

5. Book chapters

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6. Other publications

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7. Articles submitted under review

Mishra, P. K., Ballester, I., Iaboni, A., Ye, B., Newman, K., Mihailidis, A., and Khan, S. S. (2024) Depth-Weighted Detection of Behaviours of Risk in People with

Dementia using Cameras. (Submitted to *IEEE Transactions on Neural Systems & Rehabilitation Engineering*) arXiv preprint arXiv:2408.15519

Pkhakadze, I. Too Good to be True? Synthetic Data and Digital Twins in Ambient Assisted Living: A Privacy Centric and Compliance-Focused Approach. *International Joint Conference on Neural Networks IJCNN 2025.*

Tham, N. A. Q., Brady, A.-M., & Dinsmore, J. Associations between future self-continuity and older adults' acceptance of camera-based active and assisted living technologies. *Current Research in Behavioral Sciences.*

8. Planned submissions post project

Hashemifard, K., & Florez-Revuelta, F. Pose-Object-CNN Fusion: A Cross-Attention Approach for the Recognition of Activities of Daily Living. (Journal to be determined)

Tanaka, K., Mujirishvili, T., Brady, A.-M., & Dinsmore, J. G. Healthcare providers' perspective on the use of camera technologies in telehealth: a scoping review protocol. *Open Research Europe.*

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Zaal, H., Dinsmore, J., Conlan, O., & Lacey, G. Improving the Interface to Home-Based Personal Assistant Robots using an LLM in an Agentic Framework. (To submit it to ACM Transactions on Human-Robot Interaction)

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