

PROJECT DETAILS

Project Title:

Guardrailed Voice-First Dementia Device for Personalised Cognitive Engagement and Carer-Controlled Support.

Project Summary:

Older Australians with mild to moderate dementia often lose daily connection and stimulation because mainstream devices are complex. This PhD will develop and evaluate a dementia-safe, locked-down, voice-first tablet and secure cloud service that delivers carer-controlled personalised supports: family voice/photo messages, era-relevant music, curated news read aloud, reminders and short cognitive activities. The research will co-design clinical guardrails for generative-AI intent handling, implement privacy/cybersecurity-by-design, and validate usability, acceptability and safety through a clinician-supported pilot in a residential aged-care setting. Outcomes include TRL5 evidence, engagement metrics and a commercialisation pathway with industry partner Vintage IO.

Preferred Applicant Skillset:

Background in digital health/health informatics, human-computer interaction and/or computer science; interest in ageing, dementia and person-centred care. Skills in qualitative co-design (interviews, thematic analysis) and usability evaluation; experience with research ethics in vulnerable populations. Desirable: Python/R for data analysis; familiarity with ML/NLP, LLM safety/guardrails and responsible AI; understanding of privacy and cybersecurity principles; experience building prototypes (Android/web) or working with voice/TTS. Strong communication with clinicians, carers and industry; ability to work in multidisciplinary teams and translate findings into deployable design requirements.

Internship Opportunity:

Industry internship with Vintage IO and field placement with an aged-care partner site to support device deployment, onboarding/training workflows, user-testing, and translation/commercialisation readiness activities (co-design, iteration, and pilot support). There is an opportunity to work with a local dementia care provider (subject to agreement between them and ECU).

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