

RadioMe - Adaptive Radio for People with Dementia

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People with dementia and their carers are experiencing a complicated and highly personal health journey. The RadioMe system, an adaptive live radio system enriched with reminder possibilities and agitation detection and intervention with calming music, is aimed to support people with mild dementia in their own home. What interaction would keep such a system comfortable, safe and beneficial?

CCS Concepts: • **Applied computing** → **Health care information systems**.

Additional Key Words and Phrases: people with dementia; stress detection; physiological data; machine learning

ACM Reference Format:

Patrizia Di Campli San Vito. 2023. RadioMe - Adaptive Radio for People with Dementia. In *CHI Conference on Human Factors in Computing Systems Workshop 07 (CHI '23 W07: Intelligent Data-Driven Health Interfaces)*, April 23-28, 2023, Hamburg, Germany. ACM, New York, NY, USA, 1 page.

1 INTRODUCTION

Dementia is a syndrome that is being characterised by an increased cognitive decline of individuals¹. The RadioMe system is an adaptive radio system designed to enrich everyday situations in the home of people with mild dementia with reminders being played during a live radio stream and stress intervention with calming music when agitation is detected through interpretation of data from wearable devices. The RadioMe² project is interdisciplinary with Human Computer Interaction researchers from the University of Glasgow, music therapists from the Anglia Ruskin University in Cambridge, and music computation researchers and dementia experts at the University of Plymouth and is focused on helping people with dementia to increase their self-care. We are currently carefully considering the possible interactions that both people with dementia and their carers might have with the system. Conversational interaction would be an easy way, especially for the person with dementia, as any kind of interaction with systems should be built on well-known actions. We are also concerned about the level of feedback that the system should give about what it is detecting and how we can keep the users in control of interventions. There might be situation in which the system detects agitation, but maybe the person with dementia would still prefer to listen to the radio programme, for example when they are listening to potentially disturbing news, but still want to continue with the content. How should these conversation with a system be designed? How should the users, as in people with dementia and their carers, be able to adapt or label the data being collected by the system, potentially increasing its accuracy? So far, this system is envisioned to help people manage their health condition in their homes with the data being stored on the systems in place, with no involvement of health care providers. But could, and should, the data collected in the homes be used to inform health care providers? These data could paint a detailed picture of how the dementia progresses and could increase the practitioner's ability to adapt treatment. What would have to be in place to make the use of such a system feasible and safe? Who should get to decide when and how to share the data?

¹<https://www.who.int/news-room/fact-sheets/detail/dementia> (accessed 14/02/2023)

²http://mig.dcs.gla.ac.uk/projects/projects_radiome.html