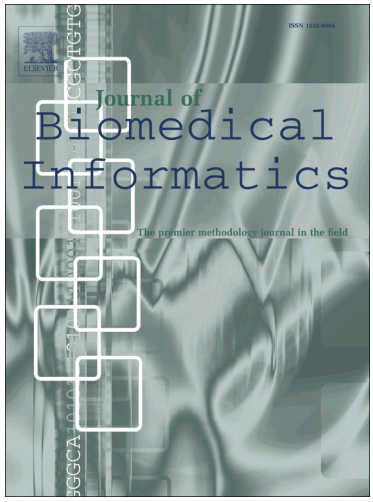

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ABSTRACT

Purpose: Assistive technologies have been identified as a potential solution for the provision of elderly care. Such technologies have in general the capacity to enhance the quality of life and increase the level of independence among their users. Nevertheless, the acceptance of these technologies is crucial to their success. Generally speaking, the elderly are not well-disposed to technologies and have limited experience; these factors contribute towards limiting the widespread acceptance of technology. It is therefore important to evaluate the potential success of technologies prior to their deployment.

Materials and methods: The research described in this paper builds upon our previous work on modeling adoption of assistive technology, in the form of cognitive prosthetics such as reminder apps and aims at identifying a refined sub-set of features which offer improved accuracy in predicting technology adoption. Consequently, in this paper, an adoption model is built using a set of features extracted from a user's background to minimise the likelihood of non-adoption. The work is based on analysis of data from the Cache County Study on Memory and Aging (CCSMA) with 31 features covering a range of age, gender, education and details of health condition. In the process of modelling adoption, feature selection and feature reduction is carried out followed by identifying the best classification models.

Findings: With the reduced set of labelled features the technology adoption model built achieved an average prediction accuracy of 92.48% when tested on 173 participants.

Conclusions: We conclude that modelling user adoption from a range of parameters such as physical, environmental and social perspectives is beneficial in recommending a technology to a particular user based on their profile.

1. Introduction

In order to address the rising demands for care of older patients with early stage memory impairments, a new area of research has emerged that aims to support people through the use of technology-based assistive solutions

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