Automated measurement of recreational reading performance on electronic devices as an indicator of visual frailty diagnostic aid and in ageing

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This project sits within the ACRC Academy, a dedicated Centre for Doctoral Training, co-located with the ACR, whose students will deliver key aspects of the ACRC research agenda through a new doctoral-level research and training programme that will also equip them for careers across a wide range of pioneering and influential leadership roles in the public, private and third sectors.

The PhD with Integrated Study in Advanced Care is a novel, structured, thematic, cohort-based, programme of 48 months duration. Each PhD research project within the Academy has been devised by a supervisory team comprising academic staff from at least two of the three colleges within the University of Edinburgh. Each annual cohort of around twelve will include students with disciplinary backgrounds spanning from engineering and data science to humanities, social science, business and commerce, social work, medicine and related health and care professions. This unique level of diversity is a key attribute of our programme.

Project:

Aim

To explore the feasibility of using reading performance to monitor trends in visual and other physiological functionalities related to ageing.

Objectives

- Develop the capability to measure reading performance automatically during recreational reading on an electronic device. (Technology development)
- Monitor recreational reading performance routinely over the medium to long term in a cohort of elderly patients. (Clinical study)
- Correlate recreational reading performance with clinical measurements of visual and other physiological functionalities linked to ageing. (Analysis, data science)

The multi-disciplinary/cross-college nature of the activities of the research project is shown in the parentheses.

Description

Reading is an everyday activity that sits at the heart of physical and emotional wellbeing for many people, from books to medicine bottles and communicating with the outside world by email or text. Measured reading performance can be indicative of people who are at a pre-clinical stage of disability but are at risk for progression to clinical disability. Moreover, measured reading performance is among the best predictors of patient-reported visual ability (and vision-related quality of life. Following a recent PhD project that successfully explored the use of head-mounted displays and dynamic text presentation to aid reading in macular disease, the purpose of this project
is to explore the feasibility of using reading performance to monitoring trends in visual and other physiological functionalities linked to ageing and frailty.

**Eligibility:**

We are specifically looking for applicants who will view their cutting-edge PhD research project in the context of the overall vision of the ACRC, who are keen to contribute to tackling a societal grand challenge and who can add unique value to – and derive great benefit from – training in a cohort comprising colleagues with a very diverse range of disciplines and backgrounds. We advise prospective candidates to engage in dialogue with the named project supervisor and/or the Director of the Academy prior to submitting an application.

**Recruitment:**

The current round of recruitment will end on 26 November. Thereafter, if places remain we will recruit on a rolling basis.

It is essential to read the How to Apply section of our website before you apply:

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