

President's Research Fellowship Programme

Proposal Abstract (300 words max)

Research Core / Group	gameCore
Proposed Supervisors 1. Principal 2. Associate(s) 3. Adjunct (external)	Dr. Noel O' Hara (gameCore) Dr. Joseph Kehoe
Project Title	A Virtual Reality/Augmented Reality (VR/AR) game environment to aid in motivation and development of a user's physical movement and skill acquisition.
Project Objectives	<p>This project will examine if fun and engaging VR/AR interactions in recreational virtual game environments will increase the intrinsic motivation with a group of users to carry out physical movement and learn a physical skill. It will focus on providing skill-based games with hopefully physical movement being a by-product of the interaction techniques.</p> <p>Building on research in VR/AR platforms with 3D 6 Degrees of Freedom accurate low latency controllers where users' physical movement can be accurately tracked. The user's movements and other biometric data are collated and assessed in the context of the user's perception of exertion and motivation to continue to carry out the game interactions.</p> <p>We hope to gain an understanding of the links between differing VR/AR experiences and motivation and enjoyment to carry out physical movement and real word skill acquisition.</p>
Methodology proposed	<ul style="list-style-type: none"> - An initial detailed review of the literature on VR/AR as applied to skill acquisition and fitness will be performed. Through this we will gain an in-depth understanding of the current state of the art and direct the empirical phase of the project. - An appropriate Development environment will be chosen (Unity and Visual Studio with HTC VIVE). - We will implement and trial some real world physical skills as to the efficacy of training in VR and then applying them in

	<p>the real world. As a consequence it is hoped that the user will gain a higher level of fitness through practice of these skills in VR.</p> <p>-</p>
<p>Expected outcomes: (e.g. deliverables & strategic impacts).</p>	<p>Outputs:</p> <ol style="list-style-type: none"> 1. A state of the art review of skill acquisition in VR and the effects on motivation for physical fitness. 2. A prototype VR app that trains the player to increase a real world skill by practising using our VR app. . <p>Strategic:</p> <ol style="list-style-type: none"> 1. There is a recent interest in VR/AR technology. This project raises the department's profile within the field as this relatively new field develops. 2. We have several Game / VR related graduate projects. This project will add to our growing expertise in this domain. 3. The level of physical fitness in the young population is on the decline, this prototype would investigate the motivations to nudge gamers into more physical active games. Especially in a time of social distancing

AFFIRMATION

Signature of main college applicant: _____ **Date:** _____

Signature of Head of Department: _____ **Date:** _____

Signature of Head of Faculty : _____ **Date:** _____

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<i>Date received:</i>	<i>Reference No.:</i>	<i>Eligibility check:</i>	<i>Result:</i>
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