School of Computing, Engineering, and the Built Environment
Edinburgh Napier University

PHD STUDENT PROJECT

Funding and application details

Funding status: Self-funded students only

Application instructions:
Detailed instructions are available at https://www.napier.ac.uk/research-and-innovation/research-degrees/how-to-apply

Prospective candidates are encouraged to contact the Director of Studies (see details below) to discuss the project and their suitability for it.

Project details

Supervisory Team:
- DIRECTOR OF STUDY: Dr Debbie Meharg (Email: D.Meharg@napier.ac.uk)
- 2ND SUPERVISOR: Dr Iain Donald and Dr Dimitri Darzentas

Subject Group: Applied informatics

Research Areas: HCI, Higher Education

Project Title: Evaluating Novel Immersive & Interactive Technologies in Higher Education

Project description:
This is an open call for research proposals related to the application and use of novel technology in Higher Education. Over the past decade the rapid development and democratisation of technology such as game engines, virtual and augmented reality platforms, and increasingly accessible and inclusive online virtual collaborative spaces, have led to increased opportunities in how we educate and train individuals across a range of areas (Radianti 2020, Marks & Thomas 2022)

These technologies have found increasingly popularity across a wide range of various fields. The COVID19 pandemic accelerated educators' experimentation

with a wide range of collaborative tools and virtual spaces and drove adoption across the sector. From the use of established games such as Minecraft (Al Janeh et al 2023, Andersen & Rustad 2022) and Roblox (Rospigliosi 2022) through a range of 'virtual space' applications such as Gathertown and Mozilla Hubs (Hopp et al 2020), to more specific VR/AR/XR applications that trained professional practitioners in complex discipline-specific procedures across multiple diverse industries, we have seen an abundance of novel approaches. However, very few have become widely established tools within Higher Education.

The purpose of the PhD is to explore novel 'immersive' teaching methods and consider how different technological applications can develop new pedagogical paradigms, engage students in defining their own educational or training goals and move novel technology use in higher education beyond the provision of simulated or experiential training. We are interested in research questions that seek to understand and push the adoption, adaptation and engagement of technologies is meaningful ways. The Applied Informatics group at the School of Computing, Engineering and the Built Environment at Edinburgh Napier University bring together a wide range of expertise across information science, digital media, interaction design and social informatics for a distinctive PhD experience where candidates can engage with diverse programmes and student cohorts to explore teaching activities and drive their research.

References:
[1] Al Janah, S., Teh, P. S., Tay, J. Y., Aiyenitaju, O., & Nawaz, R. (2023). Minecraft as a tool to enhance engagement in Higher Education. In Research and Innovation Forum 2022: rupture, resilience and recovery in the post-Covid world (pp. 465-476). Cham: Springer International Publishing.
[2] Andersen, R., & Rustad, M. (2022). Using Minecraft as an educational tool for supporting collaboration as a 21st century skill. Computers and Education Open, 3, 100094.
[3] Hopp, M., Pfiel, S., Schuster, R. M., Tiefenbacher, F., & Reiner, M. (2020). A debate about implementing immersive technology for higher education: Pre-study examining the usability of virtual reality for lectures. Human Systems Management, 39(4), 565-571.
[4] Marks, B., & Thomas, J. (2022). Adoption of virtual reality technology in higher education: An evaluation of five teaching semesters in a purpose-designed laboratory. Education and information technologies, 27(1), 1287-1305.
[5] Radianti, J., Majchrzak, T. A., Fromm, J., & Wohlgenannt, I. (2020). A systematic review of immersive virtual reality applications for higher education: Design elements, lessons learned, and research agenda. Computers & Education, 147, 103778.
[6] Rospigliosi, P. A. (2022). Metaverse or Simulacra? Roblox, Minecraft, Meta and the turn to virtual reality for education, socialisation and work. Interactive Learning Environments, 30(1), 1-3.

Candidate characteristics

Education:
A second class honour degree or equivalent qualification in Computing Science, HCI or Applied Technology

Subject knowledge:

- User Experience Design
- Higher Education

Essential attributes:
- Experience of fundamental Virtual, Augmented and Mixed Reality technologies
- Competent in interdisciplinary research approaches and qualitative and quantitative research methods.
- Knowledge of using immersive technologies in teaching settings.
- Good written and oral communication skills.
- Strong motivation, with evidence of independent research skills relevant to the project
- Good time management

Desirable attributes:
- Practical experience in Virtual Reality, Augmented Reality or Mixed Reality design and development.
- An interest in Higher Education.
- Ideally first-hand experience of delivering teaching in a higher-education environment and assessing output.