

## Candidate Information

<b>Position:</b>	Research Fellow - Visualisation for Audit Compliance
<b>School/Department:</b>	Energy, Power and Intelligent Control
<b>Reference:</b>	23/110695
<b>Closing Date:</b>	Monday 20 March 2023
<b>Salary:</b>	£35,333 per annum
<b>Anticipated Interview Date:</b>	Monday 17 & Thursday 20 April 2023
<b>Duration:</b>	Fixed term post for 3 years, or until 31 March 2026, whichever is soonest.

### JOB PURPOSE:

To be a highly productive, ambitious and collaborative member of the Advanced Research and Engineering centre (ARC) within Northern Ireland. ARC directly addresses the challenges of down-streaming innovative research into commercial applications by bringing together research and engineering expertise from PwC, University of Ulster and Queen's University Belfast within one research centre. The Research Fellow will join this vibrant network of collaborators to drive future innovations in technology and enhance our capabilities in important research areas.

The Research Fellow will assist in the planning and delivery of the research activity specifically to develop experiments and prototypes at the frontier of artificial intelligence, human computer interaction and visualisation research. They will lead the development of the visualisation of audit data aligning to the specifications developed in conjunction with PwC. They will then experimentally assess the benefits of using such advanced technologies to enhance understanding of complicated data and compliance processes.

### MAJOR DUTIES:

1. Undertake research under supervision within the specific research project and as a member of the collaborative research team contribute to develop 3D environments for visualisation and real time interaction and apply knowledge of relevant research domains along with expert coding skills to platform and framework development projects.
2. Develop/apply highly scalable algorithms based on state-of-the-art machine learning methodologies and design suitable human computer interaction user experimental studies.
3. Carry out analyses, experimental tests, critical evaluation and implementation, and interpretations of experimental data and the literature using methodologies and other techniques appropriate to area of research across a range of platforms and facilities of the wider PwC partnership.
4. Use of roadmapping/project development tools to share ongoing status updates.
5. Produce high quality research outputs consistent with project aims and commensurate with career stage. This will include collaborating and co-authoring with PI and project team (as appropriate) on outputs.
6. In consultation with the project team, promote research milestones and outputs at national and international conferences and through social media (where applicable).
7. Carry out occasional educational supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
8. Undertake supplementary duties relevant to the success of the project including administrative duties, presentation of regular progress reports and additional training and development activities as required.

### ESSENTIAL CRITERIA:

1. 2.1 Honours Degree (or equivalent) in Applied Mathematics, Computer Science, Electronics, Electrical Engineering, or a closely related discipline.
2. Normally have or be about to obtain a PhD in Computer Science, Applied Mathematics, Electronics, Electrical Engineering, Physics.

3. Relevant experience to include:
  - At least 3 years research experience in at least one of: intelligent systems, artificial intelligence, algorithms development.
  - 1-3+ years of experience developing AR or VR systems.
  - Working effectively as part of a research team in the development and promotion of the research theme.
  - Unity debugging experience.
4. Evidence of knowledge of:
  - Scripting languages, Java or Python or C#, and proficient in C++ programming and of how to optimise software for specific headsets and platforms.
  - Unity Game Engine and Editor.
  - Typical algorithms used in AI.
5. Strong publication record, commensurate with stage of career.
6. Ability to contribute to broader management and administrative processes.
7. Contribute to the School's outreach programme by links with industry, community groups etc.
8. Practical problem solving skills, independence of thought and initiative.
9. Ability to assess and organise resources.
10. Ability to communicate complex information in English effectively in oral and written format to technical and non-technical audiences.
11. Ability to build relationships with a wide range of people and roles at different levels of seniority and to influence decision making.
12. Ability to manage self and prioritise workload.
13. A pro-active approach to work and team development.
14. Commitment to continuous professional development.
15. Ability to meet the mobility requirements of the post including the travel to project partners as required by the role.

**DESIRABLE CRITERIA:**

1. Strong background in software application development.
2. Experience of the application of AI algorithms and software in multidisciplinary activities.
3. Experience of developing and testing novel algorithms.