Candidate Information

Position: Research Fellow - Natural Language Processing and Artificial Intelligence
School/Department: School of Electronics, Electrical Engineering and Computer Science
Reference: 24/111955
Closing Date: Monday 24 June 2024
Salary: £37,841 per annum
Anticipated Interview Date: Thursday 18 July 2024
Duration: 22 Months

JOB PURPOSE:

Re-Imagining Engineering Design (REID) is a multi-partner and multi-university collaboration seeking to innovate manufacturing processes. REID directly addresses the challenges of down-streaming innovative research into manufacturing processes by bringing together research and engineering expertise from Queen's University Belfast, University of York, Loughborough University and numerous Manufacturing Industries, within one vibrant research centre.

The REID team at Queen's University Belfast are seeking a collaborative member with expertise in natural language processing and artificial intelligence to help them make this breakthrough. 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 on the use of artificial intelligence to streamline aspects of manufacturing design processes. They will then experimentally assess the benefits of using such advanced technologies to enhance and simplify engineering design processes. One exciting element of this is to explore how the latest large language models, such as ChatGPT, can be used to provide a natural language interface to automatically create complex engineering design models to bypass the highly skilled and lengthy process in current practice.

MAJOR DUTIES:

1. Undertake research under supervision within the specific research project and as a member of the collaborative research team contribute to development of large language models to enhance and simplify the design process for specific manufacturing tasks. In doing this you will 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.
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.
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.

ESSENTIAL CRITERIA:

1. 2.1 Honours Degree (or equivalent) in Applied Mathematics, Computer Science, Electronics, Electrical Engineering, or a closely related engineering 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:
	- Research experience in at least one of: intelligent systems, artificial intelligence, algorithms development for AI applications.
	- Working effectively as part of a research team in the development and promotion of the research theme.
	- Experience in using Chat GPT, TensorFlow, Hugging Face or similar.
4.	Evidence of knowledge of:
	- Scripting languages, Java or Python or C#, and proficient in C++ programming and of how to optimise software
	- Strong publication record, commensurate with stage of career.
5.	Ability to contribute to broader management and administrative processes.
6.	Contribute to the School's outreach programme by links with industry, community groups etc.
7.	Practical problem solving skills, independence of thought and initiative.
8.	Ability to assess and organise resources.
9.	Ability to communicate complex information in English effectively in oral and written format to technical and non-technical audiences.
10.	Ability to build relationships with a wide range of people and roles at different levels of seniority and to influence decision making.
11.	Ability to manage self and prioritise workload.
12.	A pro-active approach to work and team development.
13.	Commitment to continuous professional development.
14.	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.