

Candidate Information

Position: Research Fellow in Explainable Edge Intelligence
School/Department: School of Electronics, Electrical Engineering and Computer Science
Reference: 26/113555
Closing Date: Monday 7 September 2026
Salary: £42,972 per annum.
Anticipated Interview Date: Wednesday 23 September 2026
Duration: 18 months

JOB PURPOSE:

To be a highly productive, ambitious and collaborative member of National Edge AI Hub (<https://edgeaihub.co.uk/>) research project/team assisting in the development of research proposals and the planning and delivery of the research activity specifically on:

Architecting explainability in/for agentic edge AI systems

The post is a critical role, and as such, successful applicants will have responsibilities in independent research, supervision, collaborations, and outreach.

MAJOR DUTIES:

1. Undertake research, to support the planning and delivery of the research activity, which will include:
 - Formalising explainability as a first-class architectural quality attribute, alongside performance, security, and maintainability.
 - Exploring and characterising the existing approaches to improving explainability in/for agentic edge AI systems, including but not limited to mathematical analytics, psychological analogies, software architectural tactics, brain-inspired explanations, etc.
 - Developing brain-inspired and human-centred explanation mechanisms for agentic edge AI systems, focusing on reasoning, decision-making, adaptation and uncertainty.
 - Translating stakeholder explanation needs into architectural tactics, design patterns and evaluation criteria for edge AI systems.
 - Evaluating lightweight explanation mechanisms through prototypes and case studies, considering fidelity, latency, energy use, trust and responsible deployment.
 - Investigating and quantifying shadow impacts of explainability, i.e. the hidden, unintended, and indirect effects (with respect to social, economic, and environmental concerns) behind explainability implementation in/for Edge AI systems. It is worth noting that shadow impacts may include both technical debt and technical credit.
 - Conducting case studies on major shadow impacts of explainable edge AI implementations on edge and offering trade-off strategies to mitigate negative shadow impacts.
 - Contributing to interdisciplinary research at the intersection of software architecture, edge intelligence, explainable AI, cognitive/brain-inspired computing and responsible AI.
2. Carry out analyses, critical evaluations, and interpretations of experimental data and the literature using methodologies and other techniques appropriate to area of research for example Design of Experiments (DOE), Grounded Theory, etc.
3. 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 on outputs.
4. In consultation with the project team, promote research milestones and outputs at national and international conferences and through social media.
5. Assist grant holder in the preparation of funding proposals and applications to external bodies.
6. 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.

7. Undertake supplementary duties relevant to the success of the project including administrative duties and additional training and development activities as required.

ESSENTIAL CRITERIA:

1. Have or be about to obtain a PhD degree in Artificial Intelligence, or Software Engineering, or Computer Science with excellent grades.
2. Recent relevant research experience to include:
 - Undertaking research in the area Agentic Artificial Intelligence, Software Engineering, Edge Computing, and/or Cybersecurity.
 - Hands-on experience with modern edge AI technologies/frameworks, such as small language models (SLM), distributed large language models (LLM-D), ultra-lightweight AI agents (e.g., PicoClaw), PyTorch, Keras, or TensorFlow or others.
 - Solid understanding of edge intelligence, explainability, and software architecture.
 - Working effectively as part of a research team in the development and promotion of the research theme.
3. Strong publication record commensurate with stage of career.
4. Experience of contributing to broader management and administrative processes.
5. Evidence of ability to work in a team.
6. Demonstrate practical problem solving skills, independence of thought and initiative.
7. Proven ability to communicate complex information effectively in oral and written format.
8. Proven ability to build relationships/ to develop internal and external networks.
9. Ability to assess and organise resources.

DESIRABLE CRITERIA:

1. Experience of transforming research findings into educational materials.