Research Fellow

Role Description

GRADE
Grade 5

LOCATION
Merchiston, Edinburgh

LINE MANAGER
Dr Amjad Ullah, Lecturer

Role Summary

This post is a fixed-term (till the end of 2026) Research Fellow position to work on a recently started EU project called: Swarmchestrate – Application-level Swarm-based Orchestration Across the Cloud-to-Things Continuum. Swarmchestrate project aims to develop a novel orchestration solution to facilitate the automated deployment and runtime management of Cloud-to-Edge-based applications. The development of the Swarmchestrate solution follows the philosophy of a distributed system while utilising a modern set of technologies such as swarm and distributed intelligence, optimisation, Blockchain, trust mechanisms such as Self-Sovereign Identities (SIS) and Distributed Identifiers (DID).

The overall goal is the development of an application-level orchestrator to support the automated deployment of microservices-based applications and their management in the Cloud-to-Edge ecosystem. The post is part of a joint Horizon Europe research project, supported by the UK Research and Innovation as part of the Horizon Europe scheme guarantee.

Line Management Responsibility for:

This role does not have any line management responsibilities currently.

Main Duties and Responsibilities

Teaching and Learning Support

- Could be expected to be involved in the assessment of student knowledge and supervision of undergraduate projects.
- Could be expected to assist in the development of student research skills at undergraduate or postgraduate level.

Research and Scholarship

- Define research objectives and questions
- Develop proposals for own or joint research, with the assistance of a mentor if required.
- Contribute to other's proposals for securing funds.
- Conduct individual and collaborative research projects.
- Write up research work for peer-reviewed publication.
- Continually update knowledge and understanding in field or specialism.
- Review and synthesise the outcomes of research studies.
- Translate knowledge of advances in the subject area into research activity.
- Disseminate results to academic/research audiences

Communication

- Deal with routine communication using a range of media.
- Communicate complex information, orally, in writing and/or electronically.
- Preparing proposals and applications to external bodies, e.g. for funding and contractual purposes.
- Communicate material of a specialist or highly technical nature within forum specific to the subject.

Liaison and networking

- Liaise with colleagues and students.
- Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
- Join external networks to share information and identify potential sources of funds.

Managing people

- Manage personal and own-project research and administrative activities, with guidance if required.

Teamwork

- Work with colleagues on joint projects, coordinating as required
- Collaborate with academic colleagues on areas of shared research interest.

- Attend and contribute to relevant meetings.

Pastoral care

- Show consideration to others.

Initiative, problem-solving and decision-making

- Use new research techniques and methods.
- Use initiative and creativity to identify areas for research, develop new research methods and extend the research portfolio.
- Use creativity to analyse and interpret research data and draw conclusions on the outcomes.
- Contribute to collaborative decision-making with colleagues in areas of research.

Planning and managing resources

- Use research resources, laboratories and workshops as appropriate.
- Plan and manage own research activity in collaboration with others.

Sensory, physical and emotional demands

- Sensory and physical demands will vary from relatively light to a high level depending on the discipline and the type of work
- Carry out tasks that require the learning of certain skills.
- Balance with help the competing pressures of research consulting practice and administrative demands and deadlines.
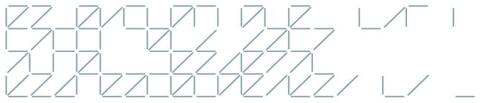
Work environment

- Is required to be aware of the risks in the work environment and their potential impact on their own work and that of others.

Expertise

- Possess sufficient breadth or depth of specialist knowledge in the discipline and of research methods and techniques (for example, having obtained a PhD degree or equivalent experience) to work within established research projects or programmes or to act as lead researcher or consultant in projects.
- Engage in continuous professional development.
- Understand equal opportunity issues as they may impact on areas of research content.

PERSON SPECIFICATION

	ESSENTIAL	DESIRABLE

Education / Qualifications

	ESSENTIAL	DESIRABLE
• A PhD in a relevant research area such as distributed computing, cloud/edge systems, or relevant computational resource management area, or equivalent demonstrable research experience in a relevant area.	✔	

Skills / Experience

	ESSENTIAL	DESIRABLE
• Demonstratable experience in conducting research in the field of Cloud/edge computing and distributed systems.	✔	
• Demonstratable experience and or/good knowledge of orchestration systems, auto-scaling, and automated resource and application management in the cloud/edge ecosystems.	✔	
• A strong publication track-record demonstrating the ability to write up research work for high-profile publications.	✔	
• Excellent skills in experimental design, experimental practice, and rigorous data analysis.	✔	
• Excellent programming skills (preferably in Python, Java).	✔	
• Experience of carrying out both independent and collaborative research.	✔	
• Experience and knowledge of using cloud middlewares (e.g. OpenStack), Kubernetes, containers	✔	
• Excellent Latex/Overleaf skills	✔	
• Excellent organisation, prioritisation and time management skills, with a flexible approach to working	✔	
• Excellent written and verbal communication skills to engage effectively with a wide-ranging audience using a range of media	✔	
• Proven ability to generate and implement new ideas	✔	
• Ability to work independently and as a part of a team to deliver research	✔	
• Excellent analytical skills	✔	