

## Research Fellow



### Role Description

#### GRADE

Grade 5

#### LOCATION

Merchiston, Edinburgh

#### LINE MANAGER

Dr Amjad Ullah, Lecturer

#### Role Summary

This post is a fixed-term (18 months until the end of 2026) Research Fellow position to work on a recently started EU project called: Swarmchestrator - Application-level Swarm-based Orchestration Across the Cloud-to-Things Continuum. Swarmchestrator 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 Swarmchestrator 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

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### 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

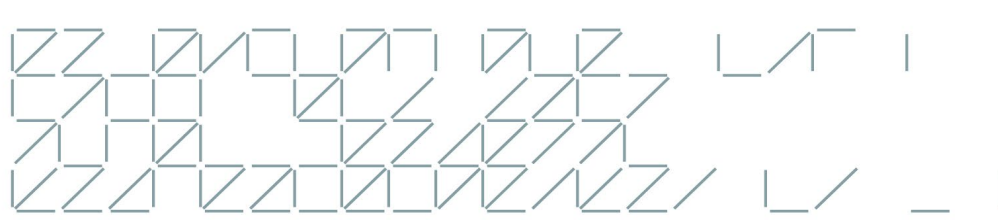
- Liaise with colleagues and students.
- Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
- Join external networks to share information and identify potential sources of funds.

### 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**

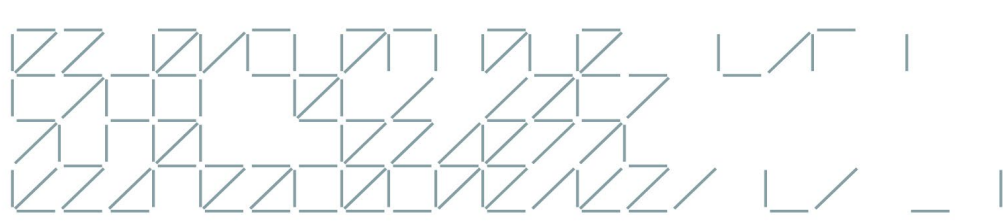
- Sensory and physical demands will vary from relatively light to a high level depending on the discipline and the type of work
- Carry out tasks that require the learning of certain skills.
- Balance with help the competing pressures of research consulting practice and administrative demands and deadlines.

### **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
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**Education / Qualifications**

- A PhD in a relevant research area such as distributed computing, cloud/edge systems, or relevant computational resource management area. ✓

**Skills / Experience**

- 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. ✓