

Research Role Profile

<b>Job Title:</b>	Research Fellow A
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<b>Responsible to:</b>	Head of research group, or principal investigator
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<b>Responsible for:</b>	Not applicable
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<b>Job Summary and Purpose:</b>
To undertake research in accordance with the specified research project(s) under the supervision of the principal investigator.

<b>Main Responsibilities/Activities</b>
<p>To undertake a range of research activities within a specified research area, assuming responsibility for specific areas of projects and making use of new research techniques and methods, in consultation with the research award holder or supervisor. This may include fieldwork, interviews, laboratory experimentation, critical evaluation and interpretation, computer-based data analysis and evaluation or library research.</p> <p>Using initiative and creativity to identify areas for research develop new research methods and extend the research portfolio. Analysing and interpreting results of own research. Write up results and prepare papers for submission to appropriate journals and conferences, and other outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results of personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in areas of research.</p> <p>Continually to update knowledge and develop skills, and translate knowledge of advances in the area into research activity.</p> <p>To plan and manage own research activity in collaboration with others. To carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control.</p> <p>To contribute to teaching in the Faculty by carrying out student supervision and/or demonstrating within the post holder's area of expertise and under the direct guidance of a member of departmental academic staff, as appropriate.</p> <p>The post holder may occasionally be required to supervise more junior research staff.</p>

## Research Role Profile

### Person Specification

#### The post holder must have:

A doctoral degree in a relevant discipline (although individuals who have almost completed a doctoral degree may be appointed). Consideration may also be given to individuals who do not hold a doctoral degree but have required skills based on a number of years experience in specified / relevant fields

The post holder will have authority over some aspects of project work and must be capable of providing academic judgement, offering original and creative thoughts and be able to interpret and analyse results.

### Relationships and Contacts

Direct responsibility to the principal investigator or academic supervisor. The post holder may be asked to serve on a relevant Faculty committee. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post holder may work on original research tasks with colleagues in other institutions.

### Special Requirements

To be available to participate in fieldwork as required by the specified research project

#### All staff are expected to:

- Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities policy.
- Help maintain a safe working environment by:
  - Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand
  - Following local codes of safe working practices and the University of Surrey Health and Safety Policy
- Undertake such other duties within the scope of the post as may be requested by your Manager.

#### Addendum to Role Profile

**Job Title:**

Research Fellow (1A)

**Job Summary and Purpose:**

## Research Role Profile

This information sheet should be read in conjunction with the accompanying generic Research RA1A Role Profile and will be used for shortlisting processes. More specifically the post holder will be expected to:

The post holder will join the team of researchers working on network security, prediction and learning on the 5G/6G testbed, and different types of attacks and research sub-projects.

The primary responsibility will be to develop Reinforcement Learning models to produce a defence strategy based on the observations of data traffic on the O-RAN of the 5G core network.

To undertake a range of activities within the software development lifecycle, assuming responsibility for interactions with intended end users and the delivery of the resulting software, in consultation with key project personnel.

### **Main Responsibilities/Activities**

1. Be responsible for the analysis, design, implementation, testing and evaluation of the project objectives, using significant creative and analytical skills to provide high-quality developments
2. Deliver software code and integrated demonstrator for a use case
3. Produce a formal report monthly as required by the funder (DSTL - FNC)
4. Identify and overcome key technical obstacles throughout system development
5. Apply creative and analytical skills as necessary to provide for appropriate system capabilities
6. Generate associated formal/technical documentation and provide for reporting and guidance to key stakeholders at various levels, and across disciplines, throughout all stages of the software development lifecycle
7. Identify and recommend promising opportunities for direction as arise during the course of the work, and manage through change control as needed to explore these.
8. Contribute to the work involved in seeking continuation of the present project

### **Person Specification**

## Research Role Profile

### The post holder must have:

- Degree level qualification (or nearing completion) in Computer Science and or EE or Physics with extensive software development experience within the field
- A working knowledge of Reinforcement Learning models and their application to networks, and keen interest in threat intelligence including network security controls
- Extensive familiarity with software languages such as Python (pytorch), Java, or C++, and associated paradigms.
- Experience with at least one of the following Linux operating systems (Linux, Ubuntu, RedHat)
- Experience of continuous integration, system configuration management, and system deployment

### Relationships and Contacts

#### Internal

The post holder will liaise primarily with the investigators (from CS and ICS) as well as another two software developers researchers on this fast-paced project, as well as other staff within the research groups in the Computer Science Research Centre and ICS at Surrey. There will also be a requirement to liaise with support and technical staff within ICS and perhaps the Faculty of Engineering and Physical Sciences.

#### External

Development and operation of the appropriate software libraries will require significant technical and project management skills as well as dealing directly with research partners when required