

Addendum to Role Profile

Job Title:	Research Fellow in Secure Systems
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Responsible to:	Dr Helen Treharne
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Responsible for:	Not applicable
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Job Summary and Purpose:
To undertake research in accordance with the specified research project(s) under the supervision of the principal investigator.

Main Responsibilities/Activities
<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, laboratory experiments, 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 and 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. Main responsibilities include:</p> <ul style="list-style-type: none"> • Design, development and implementation of innovative techniques for large-scale analysis of systems and their evaluation through simulation. Particular emphasis will be given to IoT based Systems of Systems, distributed ledger technologies, transport systems, cloud architectures and data privacy systems). • Modelling of innovative techniques for large-scale systems and their evaluation through verification. • Publications in highly ranked security journals and conferences • Effective collaboration with the co-researchers and industry. • Documentation of project outcomes in reports and presentations.

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- Contributions to projects and effective collaboration with the co-researchers and the project partners
- Documentation of project reports

Person Specification

The post holder must have:

A PhD degree (or equivalent) or close to completing a PhD degree in Computer Science, Mathematics, Electronic Engineering or other areas related to Cyber security. Postdoctoral research or industrial experience would be an advantage. All candidates will be expected to have a good understanding of the technical issues in the safety and security of systems.

Preferred qualifications:

For a practical-minded applicant:

- Experience in working with two or more of the following: trusted execution environments, networking protocols, software systems, distributed systems, system memory architectures, Azure architectures, anonymity schemes, distributed ledger technologies.
- Experience with one or more general purpose programming languages including but not limited to: Python, C/C++, Java, embedded system programming.
- Interest and ability to learn other coding languages as needed.

For a theoretically-minded applicant:

- Experience in working with two or more of the following: program verification, security protocol analysis, safety verification, runtime verification, model checking, theorem proving, attestation.
- Experience with several formal modelling languages and tools, for example, CSP, B, PRISM, LTSMIn, PAT, TAMARIN, SMV, ProVerif, etc.

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

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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