

Research Role Profile

Job Title:	Research Fellow (RA2) in Advanced 5G NR Signal Processing Design
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Responsible to:	Head of research group, or principal investigator
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Responsible for:	Responsibility for staff within own research group
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Job Summary and Purpose
To plan and deliver research in accordance with the specified research project. To contribute to securing funding for own research projects and for projects for those staff under their direct supervision.

Main Responsibilities/Activities
<p>To contribute to the development of the research of the Faculty, by planning and carrying out research activity within a specified area, often in collaboration with colleagues.</p> <p>To take a significant role in planning, co-ordinating and implementing research programmes and, where appropriate, commercial and consultancy activities. To take lead responsibility for a small research project or identified parts of a large project. This may include planning fieldwork, data analysis and evaluation and laboratory experimentation. To make decisions about research programmes and methodologies, often in collaboration with colleagues, and to resolve the problems of meeting research objectives and deadlines.</p> <p>To develop new concepts and ideas to extend intellectual understanding. Assess, interpret and evaluate the outcomes of research, and develop ideas for the application of research outcomes. To take a role in the regular publication of results in appropriate journals, in giving presentations at national and/or international conferences, and in other outputs as required and/or appropriate.</p> <p>To develop innovative research proposals (as a self-contained item or as part of a broader programme), identifying sources of funding, submitting funding bids, and gaining positive reviews for these. Promoting own area of research.</p> <p>Continually to update knowledge and develop skills. To extend, transform and apply knowledge acquired from scholarship to research and appropriate external activities.</p> <p>To carry out management and administrative tasks associated with specified research funding, including managing and developing staff within their projects; risk assessment of project activities; organisation of project meetings and documentation; management of resources, preparation of annual reports, and management or monitoring of research budgets. To oversee and implement procedures required to ensure accurate and timely formal reporting and financial control.</p> <p>To undertake liaison with external organisations including equipment manufacturers, steering committees, associated academic facilities and commercial users.</p> <p>To contribute to teaching within the Faculty by carrying out student supervision, demonstrating or lecturing duties within the post holder's area of expertise. May be required to contribute to the supervision of research students.</p>

Research Role Profile

Person Specification

The post holder must have:

Normally a doctoral degree in a relevant discipline, together with appropriate experience of working in a similar area of work.

The post holder will need to demonstrate a high level of competence and independent standing in research by being nationally recognised within their area of discipline, publishing regularly in recognised appropriate journals and attracting research funding for their own work or for other staff within the research group.

Relationships and Contacts

The post holder may have a key responsibility to the principal investigator, with prime responsibility for reporting and liaison with external funding bodies or sponsors. As a senior member of the project team, the post holder will also supervise the activities of research and technician staff within the particular research group

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.

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Addendum to Profile

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Job Summary and Purpose:

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

The post holder will work as part of the Wireless Systems Lab of the University of the 5G/6G Innovation Centre, providing specialised and innovative solutions for both internal and external 5GIC projects under the direction of the Director of the Wireless Systems Lab.

Main Responsibilities/Activities

- To undertake a range of research/development 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 laboratory experiments, computer-based simulations, library research, critical evaluation and interpretation.
- Using initiative and creativity to identify areas for development of new research methods and extend the research portfolio. Analysing and interpreting results of own research. Writing up results and preparing 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.
- Continually update technical knowledge and skills, and translate knowledge of advances in the area into the research activity.
- 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.
- The post holder may occasionally be required to supervise more junior research staff.

Person Specification

The post holder must have:**The post holder must have expertise in the following:**

- MIMO and massive MIMO systems for 5G systems and beyond
- Advanced signal processing techniques for 5G NR Physical Layer, including MIMO and massive MIMO detection and precoding
- Advanced Radio Resource Management (RRM) methods (e.g., rate adaptation, user scheduling) for 5G NR

The post holder must also have:

- Track record of publications in highly ranked journals and conferences.
- An overall working knowledge of 5G NR

It would be desirable but not essential for the post holder to also have:

- Prior experience with wireless research platforms (e.g., USRPs)
- An understanding of the current and future challenges in 5G and Open RAN systems
- Hardware and/or software implementation of digital signal processing algorithms in actual, real-time systems