UNIVERSITY OF SURREY

Research Role Profile

Job Title:	Research Fellow (RAII) in Advanced Physical Layer Implementation

Responsible to:	Dr Konstantinos Nikitopoulos

Responsible for:	Responsibility for staff within own research group

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

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.

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.

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.

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.

Continually to update knowledge and develop skills. To extend, transform and apply knowledge acquired from scholarship to research and appropriate external activities.

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.

To undertake liaison with external organisations including equipment manufacturers, steering committees, associated academic facilities and commercial users.

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.

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

Research Role Profile

Addendum to Profile

Job Title:	Research Fellow (II) in Advanced Signal Processing for Future Communication Systems

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: Work as part of a highly experienced research team, providing specialised and innovative solutions for both internal and external 5GIC projects and assist with securing future funding for research.

Main Responsibilities/Activities

- To undertake a range of research activities in the field of advanced signal processing architectures for future communication systems and their efficient realization on x86 platforms (i.e., algorithmic/architectural co-design).
- To design, develop and validate efficient software architectures for current and future communication systems, mainly targeting physical layer functionality on x86 general-purpose processors.
- To contribute to the development of research platforms and testbeds, as well as on experimentation and concept validation via software defined radios.
- To publish in 4* Journals and top Conferences in the field of communications systems.
- To use initiative and creativity to identify areas for development of new research methods and extend the research portfolio in the corresponding field of research.
- 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.
- To plan and manage own research activity in collaboration with the members of the Wireless Systems Lab.
- To carry out management and administrative tasks associated with specified research funding.
- To contribute to teaching in the Faculty by carrying out student supervision and/or demonstrating under the direct guidance of a member of departmental academic staff, as appropriate.
- The post holder may occasionally be required to supervise more junior research staff.

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Person Specification
The post holder must have expertise in the following: • High-performance programming targeting signal processing algorithms for high throughput and low-latency using C/C++ on x86 architectures   • Code optimisation (e.g., multiprocessing with pthreads, SIMD programming) and profiling tools   • Development on Linux operating systems   **The post holder must also have at least one of the following:**   • Good understanding of signal processing for wireless communication systems   • SIMD programming using Intel intrinsics   • Track record of publications in highly ranked journals and conferences in at least one of the above fields   **It would be desirable but not essential for the post holder to also have:**   • An overall working knowledge of cellular networks (e.g. LTE, 5GNR).   • Linux shell scripting experience.   • Prior experience with wireless research platforms (e.g., Open Air Interface with USRPs).

Relationships and Contacts
The post holder will liaise primarily with the Dr Konstantinos Nikitopoulos and the Wireless Systems Lab team, as well as other staff within the ICS. There will also be a requirement to liaise with support and technical staff within the Faculty of Engineering and Physical Sciences.