

Research Role Profile

Job Title:	Research Fellow in ISAC for 6G RAN
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Responsible to:	Professor Gabriele Gradoni
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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
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 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. 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. The post holder may occasionally be required to supervise more junior research staff.

Research Role Profile

Person Specification

The post holder must have:

A PhD degree (or equivalent) or close to completing a PhD degree in Electronic Engineering, Physics or other areas related to RF/Microwave Engineering. Postdoctoral research or industrial experience would be an advantage.

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

N/A

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 in ISAC for 6G RAN
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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:

Work on a research project addressing the technology creation, simulation and dissemination for ISAC RAN technologies involving user equipment in monostatic, bistatic and multistatic sensing configurations. The research may include electromagnetic ISAC channel modelling, waveform and transceiver design, sensing signal processing, AI/ML-enabled radio interfaces, MIMO beamforming and channel estimation, interference management, environment reconstruction, target imaging, or radio-resource management.

Main Responsibilities/Activities

- Conduct original research and develop rigorous models, algorithms and simulation methods for ISAC, with a clear route from theoretical formulation to reproducible numerical evaluation.
- Develop and maintain evaluation platforms, software, source code and documented results for link-level and/or system-level studies, using appropriate tools such as MATLAB, Python, C/C++ or Sionna.
- Investigate relevant ISAC scenarios and performance metrics, including communication-sensing trade-offs, delay-Doppler-angle processing, target and clutter modelling, high-mobility channels, near-field/far-field effects, interference cancellation and sensing-assisted communications.
- Take an active role in formal project reporting: prepare high-quality technical reports and deliverables, maintain clear records of assumptions, methods, code and results, track actions and milestones, and provide timely evidence of progress against the agreed work plan.
- Liaise closely and proactively with InterDigital Europe (IDE), including regular technical meetings, joint planning, exchange of simulation results and coordination with InterDigital researchers. The postholder will spend an agreed part of the appointment working at InterDigital's London office.
- Attend and actively participate in ETSI ISG ISAC meetings, in person or online as required; monitor relevant work items; help draft, review and present joint pre-standardisation contributions; and report standards developments back to the Surrey-InterDigital project team.
- Contribute to invention disclosures, patent-oriented technical documentation, peer-reviewed journal and conference papers, presentations and other dissemination outputs, in coordination with and subject to the established project review process.
- Collaborate with the project's PhD researchers and wider ICS/6GIC teams, contribute to technical discussions and demonstrations, and present results effectively to academic, industrial and standards audiences

Research Role Profile

Person Specification

The post holder must have:

A PhD in wireless communications (or close to completing), signal processing, radar or sensing, radio propagation/channel modelling, machine learning for communications, or a closely related discipline.

Essential experience:

- Strong research expertise in one or more areas directly relevant to ISAC, such as channel modelling, radar/sensing signal processing, MIMO and beamforming, waveform/transceiver design, radio-resource management, environment reconstruction or AI/ML for wireless systems.
- Excellent mathematical and analytical ability, supported by strong programming and simulation skills and experience of producing reliable, well-documented research software.
- A track record of high-quality research outputs appropriate to career stage, together with the ability to formulate research questions, work independently and deliver against defined milestones.
- Excellent written and verbal communication skills, including the ability to prepare precise technical reports, standards-style contributions, presentations and publication-quality manuscripts.
- Strong organisational and interpersonal skills, with a proactive approach to reporting, action tracking, industrial liaison and collaborative work across academic and company teams.
- Willingness to spend part of the appointment at InterDigital's London office and to attend ETSI ISG ISAC and other relevant project or dissemination meetings, including travel when required.

Desirable experience:

- Knowledge of 5G NR and emerging 6G radio technologies, including positioning, reference signals, channel estimation, sensing waveforms or RAN protocols.
- Experience of link-level or system-level simulators, channel-modelling tools, software-defined radio, experimental testbeds or proof-of-concept development.
- Previous participation in ETSI, 3GPP or other standards/pre-standards activities, or experience of industry-funded collaborative research, invention disclosures and patent generation.

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Relationships and Contacts

This is a strongly industry-facing role combining advanced technical research, simulation development, pre-standardisation, intellectual-property generation and formal project delivery. The successful candidate will work closely with researchers at Surrey and InterDigital and will help develop research findings into practical evaluation tools, technical reports, standards contributions and scientific publications in top-tier journals.

Part of the appointment will be conducted at InterDigital's London office, with regular in-person technical engagement with the IDE team. The candidate must therefore be willing and able to work across the University of Surrey and InterDigital locations as required by the project.