



Candidate Information

Position:	Research Fellow
School/Department:	Centre for Wireless Innovation
Reference:	23/110865
Closing Date:	Monday 22 May 2023
Salary:	£36,333 - £37,386 per annum
Anticipated Interview Date:	Monday 5 June 2026
Duration:	21 months or until 30 April 2026, whichever is sooner

JOB PURPOSE:

To be a highly productive, ambitious and collaborative member of a major EPSRC project involving 17 UK universities and 4 industrial partners. To optimise radio access from a user-centric perspective considering diverse service requirements and taking into account network resilience, and become an active member of the Centre for Wireless Innovation and the School of EEECS at QUB, assisting in the production of world leading research output.

MAJOR DUTIES:

1. Develop an orchestration strategy considering: cell-free massive MIMO networks, beamforming, beam acquisition and tracking, integration of RIS THz and optical wireless networks, and 3D networks.
2. Build a novel link-level simulator (to be made publicly available) that will be used to synthesise the performance of the above mentioned radio access technologies.
3. Develop a ML-based strategy to optimally select the best combination of radio access technologies to satisfy specific service-oriented and user-centric requirements.
4. Evaluate the performance of the proposed solutions in MATLAB and/or Python.
5. Develop and plan an area of personal research and expertise and/or undertake research under supervision within a specific research project or as a member of a research team.
6. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to the proposed research topic.
7. Present regular progress reports on research to research group members or to external audiences to disseminate and publicise research findings.
8. Prepare, often in consultation with the supervisor, material for publication in national and international journals and presentations at international conferences.
9. Assist grant holder in the preparation of funding proposals and applications to external bodies.
10. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget.
11. Carry out occasional undergraduate (final year, MEng) project supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of the academic staff.

ESSENTIAL CRITERIA:

1. Have, or be about to obtain, a PhD in Electronics, Electrical Engineering, or closely related discipline.
2. At least 3 years' research experience in communication theory, communications signal processing, networking orchestration or related area.
3. Evidence of strong publication record commensurate with stage of career.
4. Demonstrable ability to:
 - contribute to research management and administrative processes.
 - contribute to the School's outreach programme by links with industry, community groups etc.
5. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.

6. Strong communication skills with a demonstrable ability to communicate complex information clearly.
7. Proven ability to build contacts and participate in internal and external networks.
8. Ability to travel and present at project meetings, and international conferences.

DESIRABLE CRITERIA:

1. Able to demonstrate:
 - Experience with MIMO communications, cell-free massive MIMO, THz networks or intelligent metasurfaces.
2. Experience in:
 - EU or RCUK projects, in particular in project task management and reporting through periodic deliverables.
3. Experience in producing timely technical documentation on research projects (deliverables, reports).
4. Experience with presentations of research outputs in conferences, workshops, or seminars.