Candidate Information

Position:	ANCHOR Marie Sklodowska-Curie Doctoral Candidate
School/Department:	School of Electronics, Electrical Engineering and Computer Science
Reference:	26/113255
Closing Date:	Sunday 12 April 2026
Salary:	£42,122 per annum, Plus Monthly Mobility Allowance: £493.91
Anticipated Interview Date:	Friday 17 April 2026
Duration:	36 months

JOB PURPOSE:

ANCHOR has meticulously designed fifteen doctoral projects that focus on cutting-edge innovations in optical, radio, and THz wireless communications and the harmonization of coexisting spectra and networks. Through these efforts, ANCHOR will not only deepen fundamental theories but also provide practical, scalable solutions to improve 3D coverage, mobility, latency, network capacity, energy efficiency, and suitability for the future telecommunications infrastructure.

By fostering cross-sector/cross-border collaboration in next-generation communication systems and digital infrastructure, ANCHOR will contribute significantly to the Horizon Europe priorities under the Digital, Industry, and Space Cluster. The project also directly supports the EU's Digital Decade goals by driving the development of sustainable, high-capacity communication networks, contributing to Europe's leadership in the digital economy.

ANCHOR's doctoral candidates will be guided by leading experts from academia and industry through well-structured projects, secondments, and training activities. This comprehensive approach ensures that the candidates acquire the multidisciplinary knowledge and skills required to address real-world challenges, drive innovation in wireless networks, and develop promising personal careers.
ANCHOR consortium is looking for highly motivated, outstanding doctoral candidates (DCs) with the skills, knowledge and enthusiasm to contribute to the innovation and technological advancement of next-generation communication networks. DCs enrolled in the program will have opportunities to work and collaborate with world-leading researchers from the consortium partners, participate in secondments across academia and industry, and develop a comprehensive skill set through a well-structured training program and cross-sector supervision, which will prepare you for successful careers in both academic and industrial environments.
At the Queen's University Belfast, DC commences the research by developing the QML algorithms (e.g., QLSTM, quantum neuromorphic computing) for the channel estimation with high dimension data in the wireless network with high dynamics caused by user requirements, sophisticated propagations, and diverse spectrums. Then, the DC will develop the data-inspired quantum circuits and models and benchmark their performance with respect to complexity, generalizability, and speed. At last, the DC will work on optimizing the QML algorithms, e.g., minimizing qubits requirements, reducing pilot overhead and training data size, reducing channel data dimension, and improving the computational footprint and model generalizability.

To be considered for the position, candidates are required to have a suitable degree in a relevant field of study, must not already hold a doctoral degree, and be able to demonstrate relevant skills and knowledge. Full details of the criteria are given below in the list of essential and desirable criteria. The MSCA funding of this position has the additional requirement that DCs must not have resided or carried out their main activity (work, studies, etc.) in the country of recruiting beneficiary (i.e. the UK for DC2.5 and DC3.5) for more than 12 months in the 36 months immediately before their date of recruitment. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account.

MAJOR DUTIES

1. As a DC within the ANCHOR MSCA-DN, you will play an important role in achieving the project's research objectives and contributing to the development of next-generation of telecommunication solutions. In this project, your key responsibilities include:
- Conducting original, high-quality research aligned with the objectives of the ANCHOR project, and towards PhD thesis.
- Participating in local and network-wide training events, workshops, communications activities and planned secondments.
- Carry out routine administrative tasks associated with the research project/s to ensure that projects are completed on time.
- Developing proof-of-concept wherever applicable to justify the research.
- Carry out appropriate analysis and write up results of own work and lead a new direction as the project progresses.
- Present regular progress reports on research to members of the research group or external audiences to disseminate and publicise research findings.
- Contribute to the production of research reports, publications, and proposals.
- Any other duties that the programme supervisor may reasonably request.
- Plan and manage own workload to conduct research both independently and collaboratively as required by the project, refining the work programme as necessary in conjunction with the supervisors. This will involve regular communication with other researchers in the ANCHOR Network.
- Engage in continuous professional development.

ESSENTIAL CRITERIA

1. The minimum requirement is 2:1 Honours degree in Computer Science (CS), electrical, electronics, or telecommunications (or related discipline).
2. Proven ability to contribute to broader management of processes.
3. Excellent interpersonal skills.
4. Ability to assess and organise resources.
5. Team worker, highly motivated, supportive of colleagues within the group.
6. Exceptional problem-solving skills.
7. Willing to attend and present at in-house and industrial meetings.
8. Proven research experience in quantum machine learning, machine learning, and wireless communications (underwater communications, satellite communications, and cellular communications).

DESIRABLE CRITERIA

1. Academic research/project experience in QML, quantum optimization and algorithms, wireless communications and security.
2. Knowledge of simulation tools for wireless communication systems; experience in MATLAB/Python (or similar).
3. Mathematical skills for conceptualisation, modelling, optimisation, and analysis of problems.
4. Experience in disseminating research output, publications in scientific journals or conferences in related areas.

OTHER IMPORTANT CRITERIA

1. Must satisfy the global MSCA DC recruitment criteria regarding nationality, prior qualifications, etc.