Candidate Information

Position: Research Fellow
School/Department: School of Electronics, Electrical Engineering and Computer Science
Reference: 18/106720
Closing Date: Tuesday 11 September 2018
Salary: £33,936 - £51,138 per annum (potential to progress to £54,891 per annum through sustained exceptional contribution)
Anticipated Interview Date: Thursday 20 September 2018
Duration: 36 months

JOB PURPOSE:

To contribute to the US-Ireland project, between Queen's University Belfast, Purdue University and University College Dublin, entitled 'Transcoding: A New Approach for Multi-Hop Communications' by developing novel communication-theoretic and algorithmic solutions to boost the performance of future multi-hop communications under latency and reliability constraints. The successful candidate will work closely with our project partners in the USA and Republic of Ireland. The candidate will also 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 and the teaching activities.

MAJOR DUTIES:

1. Develop a holistic communication theoretic framework for MIMO systems using the transcoding scheme, developed recently by our partners at Purdue University.
2. Characterize the system performance for system and hardware imperfections that can substantially compromise the system performance.
3. Contribute to the development of a physical demonstrator using the facilities at Purdue University.
4. Evaluate the performance of the proposed solutions in MATLAB.
5. Get involved with the teaching activities within the School of EEECS.
6. 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.
7. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to experimental computing systems research.
8. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
9. Prepare, often in consultation with the supervisor, material for publication in national and international journals and presentations at international conferences.
10. Assist grant holder in the preparation of funding proposals and applications to external bodies.
11. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget.
12. 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 academic staff.
13. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.

Planning and Organising:

1. Plan for the use of research resources, laboratories and workshops where appropriate.
2. Plan own day-to day activity within framework of the agreed research programme.
3. Plan in advance to meet deadlines for journal publications and to prepare presentations and papers for conferences.
4. Coordinate and liaise with other project partners over work progress

Resource Management Responsibilities:
1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance as required to support staff and any students who may be assisting with research.

Internal and External Relationships:
1. Liaise on a regular basis with colleagues and students in the Centre for Wireless Innovation, the School of EEECS and faculties in Queen's University Belfast to build research collaborations.
2. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
3. Join external networks to share information and ideas.

ESSENTIAL CRITERIA:
1. PhD in Electronics, Electrical Engineering, or closely related discipline.
2. At least 2:1 honours degree in Electronics, Electrical Engineering, or closely related discipline.
3. At least 3 years research experience in signal processing and communication theory for future wireless networks.
4. Ability to contribute to research management and administrative processes.
5. Contribute to the School's outreach programme by links with industry, community groups etc.
6. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
7. Ability to communicate complex information clearly.
8. Ability to build contacts and participate in internal and external networks.
9. Demonstrable intellectual ability.
10. Ability to assess and organise resources.
11. Ability to travel and present at project meetings, and international conferences.

DESIRABLE CRITERIA:
1. Strong background in communication theory, signal processing and optimization for MIMO wireless communications.
2. Experience in EU or RCUK projects, in particular in project task management and reporting through periodic deliverables. Experience working with external industrial or academic partners.
3. Experience in producing timely technical documentation on research projects (deliverables, reports).
4. Experience with presentations of research outputs in conferences, workshops, or seminars.
5. Teaching experience.