Candidate Information

Position: Research Assistant
School/Department: School of Mechanical and Aerospace Engineering
Reference: 24/111808
Closing Date: Monday 29 April 2024
Salary: £32,024 per annum
Anticipated Interview Date: Monday 13 May 2024
Duration: Fixed Term Contract available until 31 March 2025

JOB PURPOSE:

To support the research of the Queen's University Belfast and MBDA collaborative research team, investigating strategies and methods for generating evidence from the computational simulation of functional performance (e.g. autonomous control of a drone) to support certification by analysis.

Successful applicants will have responsibilities in independent research, collaborating with the QUB team, and outreach. Direct collaboration with MBDA will be a key aspect of the role, including regular meetings with engineers from the company.

MAJOR DUTIES:

1. Understand and implement the requirements of model assurance.
2. Assist in the design and development, and conduct, physical experiments of functional performance using available equipment and resources to generate evidence as might be used for certification. This will include flight testing (e.g. on a fixed wing drone).
3. Assist in the design and development, and conduct, computational simulations of functional performance to generate evidence as might be used for certification. This will include virtual flight testing using Mission Planner and an appropriate flight simulator.
4. Assist in carrying out analyses, critical evaluations, and interpretations of experimental data and the literature using methodologies, and other techniques, appropriate to area of research.
5. Produce high quality research outputs in oral and written format.
6. Produce high quality research outputs consistent with project aims and commensurate with career stage. This will include collaborating and co-authoring with the wider project team (as appropriate) on outputs.
7. In consultation with the project team, promote research milestones and outputs at national and international conferences.
8. Assist grant holder in the preparation of funding proposals and applications to external bodies.
9. Carry out occasional educational supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
10. Undertake supplementary duties relevant to the success of the project including administrative duties and additional training and development activities as required.

ESSENTIAL CRITERIA:

1. Have or about to obtain a degree in Mechanical or aerospace engineering, or related science (expectation 2.1 or higher).
2. Recent relevant experience to include:
   • Demonstrable experience in the use of the autonomous navigation capability on a drone (e.g. Pixhawk)
   • Demonstrable experience of programming mission profiles for a drone (e.g. Ardupilot)
   • Knowledge of using relevant techniques to carry out analyses, critical evaluations, and interpretations of data as relevant to the research project.
3. Willingness to undertake additional training in research methods and other related skills as required.
4. Practical problem-solving skills, independence of thought and initiative.
5. Ability to communicate complex information effectively in oral and written format.
6. Ability to build relationships to develop internal and external networks.
7. Ability to assess and organise resource.

8.   Willingness to travel to meet the requirements of the research project.

DESIRABLE CRITERIA:
1.   Working towards a PhD in the area of Computational Simulation.
2.   Demonstrating experience of working on the certification of products.
3.   Demonstrable experience in the use of software for simulating flight missions (e.g. X-Plane).
4.   Demonstrable experience of computational simulation in an industrial setting.
5.   Demonstrable experience of physical experimentation in an industrial setting.
6.   A publication record which is commensurate with career stage and experience.