



Candidate Information

Position:	Research Fellow - Fantasia Research Project
School/Department:	School of Mechanical and Aerospace Engineering
Reference:	22/109815
Closing Date:	Monday 30 May 2022
Salary:	£34,304 per annum
Anticipated Interview Date:	Friday 17 June 2022
Duration:	Available until 30 November 2024

JOB PURPOSE:

To be a highly productive, ambitious, and collaborative member of the Fantasia research project, contributing to the planning and delivery of the research activity, and assisting in the development of future research proposals. The research activity will focus on the development of automated approaches for the finite element analysis of aviation power plants.

The post is a critical role, and as such, successful applicants will have responsibilities in independent research, supervision, planning, collaborations with the industrial (Rolls Royce) and academic (Cranfield University) partners and outreach activities.

MAJOR DUTIES:

1. Undertake research under supervision within the Fantasia research project.
2. Design, develop and refine research on geometry modelling and integrated and automated structural analysis of aviation power plants configurations using a range of numerical models. This will include:
 - Parametric Geometry Modelling
 - Finite element modelling
 - Optimisation techniques
3. Carry out analyses, critical evaluations, and interpretations of experimental/numerical data obtained from different partners (Rolls Royce, Cranfield University) and the literature using methodologies and other techniques appropriate to area of research.
4. Produce high quality research outputs consistent with project aims and commensurate with career stage. This will include collaborating and co-authoring with PI and project team (as appropriate) on outputs.
5. In consultation with the project team, promote research milestones and outputs at national and international conferences and through social media.
6. Assist grant holder in the preparation of funding proposals and applications to external bodies.
7. 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.
8. Undertake supplementary duties relevant to the success of the project including administrative duties and additional training and development activities as required.

ESSENTIAL CRITERIA:

1. Normally have or be about to obtain a *relevant PhD in the field of Computer Aided Engineering.
2. At least 3 years relevant* research experience to include:
 - Demonstrable experience with CAD parametrization.
 - Demonstrable experience with Finite Element Analysis.
 - Demonstrable experience in programming/scripting, beyond that taught in undergraduate engineering courses.
 - A proven track record of using numerical models to carry out analyses, critical evaluations, and interpretations of data.
3. Strong publication records commensurate with stage of career.
4. Managing and administrating a research project.
5. Willingness to undertake additional training in research methods and other related skills as required.
6. Practical problem-solving skills, independence of thought and initiative

7. Ability to communicate complex information effectively in oral and written format.
8. Ability to assess and organise resources.

DESIRABLE CRITERIA:

1. Have a PhD specifically in the field of finite element modelling and analysis.
2. Experience using the following software:
 - Siemens NX
 - MSC Nastran
3. Experience of translating research findings into educational materials.
4. Demonstrable ability to work effectively as part of a research team in the development and promotion of the research theme.
5. Experience of contributing to university outreach programme.
6. Experience of liaising with industrial and/or academic partners on research projects.
7. Experience of building relationships to develop internal and external networks.