

Research Role Profile

Job Title:	Research Fellow A in Computational Engineering
Responsible to:	Principal investigator: Prof. Nick Hills
Responsible for:	Not applicable

Job Summary and Purpose:
To undertake research in accordance with the specified research project(s) under the supervision of the principal investigator.

Main Responsibilities/Activities
To undertake a range of research activities within a specified research area, assuming responsibility for specific areas of projects and making use of new research techniques and methods, in consultation with the research award holder or supervisor. This may include fieldwork, interviews, laboratory experimentation, critical evaluation and interpretation, computer-based data analysis and evaluation or library research. Using initiative and creativity to identify areas for research develop new research methods and extend the research portfolio. Analysing and interpreting results of own research. Write up results and prepare papers for submission to appropriate journals and conferences, and other outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results of personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in areas of research. Continually to update knowledge and develop skills, and translate knowledge of advances in the area into research activity. To plan and manage own research activity in collaboration with others. To carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control. To contribute to teaching in the Faculty by carrying out student supervision and/or demonstrating within the post holder's area of expertise and under the direct guidance of a member of departmental academic staff, as appropriate. The post holder may occasionally be required to supervise more junior research staff.

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Person Specification

The post holder must have:

A doctoral degree in a relevant discipline (although individuals who have almost completed a doctoral degree may be appointed). Consideration may also be given to individuals who do not hold a doctoral degree but have required skills based on a number of years experience in specified / relevant fields

The post holder will have authority over some aspects of project work and must be capable of providing academic judgement, offering original and creative thoughts and be able to interpret and analyse results.

Relationships and Contacts

Direct responsibility to the principal investigator or academic supervisor. The post holder may be asked to serve on a relevant Faculty committee. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors.

Special Requirements

None

All staff are expected to:

- Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities policy.
- Help maintain a safe working environment by:
 - Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand
 - Following local codes of safe working practices and the University of Surrey Health and Safety Policy
- Undertake such other duties within the scope of the post as may be requested by your Manager.

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Addendum

This document provides additional information relating to both specific aspects of the post/faculty and any post specific person specification criteria. The information contained within this document should always be read in conjunction with the accompanying generic Job Purpose.

Job Title:

Research Fellow in Computational Engineering

Background Information/Relationships

This Research Fellow post is within the Rolls-Royce ThermoFluid Systems University Technology Centre (UTC), led by Prof. Nick Hills (Head of School of Engineering). The ThermoFluid Systems UTC works on the modelling of internal air systems for gas turbine engines. This involves both fluid and solid models (and the coupling between them) with a strong emphasis on computational performance and in particular parallel computing efficiency.

The postholder will be working on a multi-partner project led by Rolls-Royce. There will be opportunities to engage with engineers at Rolls-Royce and with the other academic partners. There will be regular project meetings at which the postholder will be expected to present periodically.

The postholder will also be involved with the supervision of related PhD student projects.

Person Specification

This section describes the sum total of knowledge, experience & competence required by the post holder that is necessary for standard acceptable performance in carrying out this role. This is in addition to the criteria contained within the accompanying generic Job Purpose.

Qualifications and Professional Memberships

Essential/ Desirable

A higher research degree (PhD) or equivalent experience in a relevant subject

Essential

Experience of large scale computational modelling and parallel computing

Desirable

Experience of (or interest in) Artificial Intelligence applied to modelling

Desirable

Experience of turbomachinery simulation

Desirable

Key Responsibilities

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This document is not designed to be a list of all tasks undertaken but an outline record of any faculty/post specific responsibilities (5 to 8 maximum). This should be read in conjunction with those contained within the accompanying generic Job Purpose.

1. Build large scale models of engine components and systems
2. Develop parallel computing codes.
3. Develop applications of AI for the project.
4. Attend project meetings and present results.
5. Publish results and attend appropriate national and international conferences.

N.B. The above list is not exhaustive.