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| Last updated: | 06/09/2019 |

**JOB DESCRIPTION**

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| Post title: | **Research Fellow in Tomographic Image Reconstruction** | | |
| Academic Unit/Service: | ISVR | | |
| Faculty: | Engineering and Physical Sciences | | |
| Career Pathway: | Education, Research and Enterprise (ERE) | Level: | 4 |
| \*ERE category: | Research pathway | | |
| Posts responsible to: | Thomas Blumensath | | |
| Posts responsible for: | N/A | | |
| Post base: | Office-based | | |

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| Job purpose |
| To undertake research in accordance with the specified research project under the supervision of the award holder. |

| Key accountabilities/primary responsibilities | | % Time |
| --- | --- | --- |
|  | To undertake research under the supervision of the grant holder on a project to develop novel algorithms to reconstruct three dimensional images from tomographic data by utilising prior information in the form of technical drawings. | 70 % |
|  | Regularly disseminate findings by taking the lead in preparing publication materials for referred journals, presenting results at conferences, or exhibiting work at other appropriate events. | 10 % |
|  | Contribute to the writing of bids for research funding. | 2.5 % |
|  | Investigate novel models and approaches to test and develop them. | 5 % |
|  | Collaborate/work on original research tasks with colleagues in other institutions | 2.5 % |
|  | 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. | 2.5 % |
|  | Supervise the work of junior research staff. | 2.5% |
|  | Carry out occasional undergraduate supervision, demonstrating or lecturing duties within own area of expertise, under the direct guidance of a member of departmental academic staff. | 5% |

| Internal and external relationships |
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| Direct responsibility to holder of research award or academic supervisor.  May have additional reporting and liaison responsibilities to external funding bodies or sponsors.  May be asked to serve on a relevant Academic Unit committee, for example research committee.  Collaborators/colleagues in other work areas and institutions. |

| Special Requirements |
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| To attend national and international conferences for the purpose of disseminating research results.  *Applications for Research Fellow positions will be considered from candidates who are working towards or nearing completion of a relevant PhD qualification. The title of Research Fellow will be applied upon successful completion of the PhD. Prior to the qualification being awarded the title of* ***Senior Research Assistant*** *will be given.* |

**PERSON SPECIFICATION**

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| Criteria | Essential | Desirable | How to be assessed |
| Qualifications, knowledge and experience | PhD or equivalent in computer science, engineering, physics, applied mathematics or an equivalent technical discipline  Strong programming skills | Experience using ASTRA or TIGRE tools  Background in numerical optimisation  Detailed understanding of tomographic image reconstruction algorithms  Matlabl and python programming skills  Expertise in ray tracing and finite element computation | CV/Interview/  References |
| Planning and organising | Able to organise own research activities to deadline and quality standards. |  | Interview/ References |
| Problem solving and initiative | Able to develop understanding of complex problems and apply in-depth knowledge to address them.  Able to develop original techniques/methods. |  | CV/Interview/  References |
| Management and teamwork | Able to supervise work of junior research staff, delegating effectively.  Able to contribute to Academic Unit management and administrative processes.  Work effectively in a team, understanding the strengths and weaknesses of others to help teamwork development. |  | CV/Interview/  References |
| Communicating and influencing | Communicate new and complex information effectively, both verbally and in writing, engaging the interest and enthusiasm of the target audience.  Able to present research results at group meetings and conferences.  Able to write up research results for publication in leading peer-viewed journals.  Work proactively with colleagues in other work areas/institutions, contributing specialist knowledge to achieve outcomes. |  | Interview  CV  References |
| Other skills and behaviours | Understanding of relevant Health & Safety issues.  Positive attitude to colleagues and students. |  | Interview |
| Special requirements | Able to attend national and international conferences to present research results. |  | Interview |

**JOB HAZARD ANALYSIS**

**Is this an office-based post?**

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| Yes | If this post is an office-based job with routine office hazards (eg: use of VDU), no further information needs to be supplied. Do not complete the section below. |
| No | If this post is not office-based or has some hazards other than routine office (eg: more than use of VDU) please complete the analysis below.  Hiring managers are asked to complete this section as accurately as possible to ensure the safety of the post-holder. |

## - HR will send a full PEHQ to all applicants for this position. Please note, if full health clearance is required for a role, this will apply to all individuals, including existing members of staff.

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| **ENVIRONMENTAL EXPOSURES** | **Occasionally**  (<30% of time) | **Frequently**  (30-60% of time) | **Constantly**  (> 60% of time) |
| Outside work |  |  |  |
| Extremes of temperature (eg: fridge/ furnace) |  |  |  |
| ## Potential for exposure to body fluids |  |  |  |
| ## Noise (greater than 80 dba - 8 hrs twa) |  |  |  |
| ## Exposure to hazardous substances (eg: solvents, liquids, dust, fumes, biohazards). Specify below: |  |  |  |
| Frequent hand washing |  |  |  |
| Ionising radiation | X |  |  |
| **EQUIPMENT/TOOLS/MACHINES USED** | | | |
| ## Food handling |  |  |  |
| ## Driving university vehicles(eg: car/van/LGV/PCV) |  |  |  |
| ## Use of latex gloves (prohibited unless specific clinical necessity) |  |  |  |
| ## Vibrating tools (eg: strimmers, hammer drill, lawnmowers) |  |  |  |
| **PHYSICAL ABILITIES** | | | |
| Load manual handling | X |  |  |
| Repetitive crouching/kneeling/stooping |  |  |  |
| Repetitive pulling/pushing |  |  |  |
| Repetitive lifting |  |  |  |
| Standing for prolonged periods |  |  |  |
| Repetitive climbing (ie: steps, stools, ladders, stairs) |  |  |  |
| Fine motor grips (eg: pipetting) |  |  |  |
| Gross motor grips |  |  |  |
| Repetitive reaching below shoulder height |  |  |  |
| Repetitive reaching at shoulder height |  |  |  |
| Repetitive reaching above shoulder height |  |  |  |
| **PSYCHOSOCIAL ISSUES** | | | |
| Face to face contact with public |  |  |  |
| Lone working |  |  |  |
| ## Shift work/night work/on call duties |  |  |  |