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| Last updated: | <date> |

**JOB DESCRIPTION**

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| Post title: | **Research Fellow Edge Computing for AI** | | |
| Academic Unit/Service: | School of Electronics and Computer Science | | |
| Faculty: | Faculty of Engineering and Physical Science |  |  |
| Career pathway: | Education, Research and Enterprise (ERE) | Level: | 4 |
| \*ERE category: | Research | | |
| Posts responsible to: | Principal Investigator | | |
| Posts responsible for: | n/a | | |
| Post base: | Office-based | | |

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| Job purpose |
| The role will be part of the EDGE AI Hub which is a national research and innovation programme led by the University of Newcastle, with the University of Southampton as a core partner. The National EdgeAI Hub aims to unite the UK’s expertise in AI and EC across academia, industry, and the public sector. It seeks to foster a collaborative research community, leveraging existing UK investments in this field, creating new collaborative opportunities, and amplifying the impact of research outcomes.  The role will involve carrying out research into speech technologies at the edge. This includes   * Developing advanced voice verification and recognition systems optimized for edge devices * Researching methods for audio quality estimation and enhancement in resource-constrained environments * Creating innovative voice analysis techniques that can operate efficiently on edge computing platforms * Working on the entire lifecycle of AI voice products (from idea generation and training to implementation and governance)     The role holder will be expected to undertake independent research as well as working as part of a team - this will include using approaches or methodologies and techniques appropriate to the type of research, and being responsible for writing up their work in order to contribute to published outcomes. The role holder will aim to develop case-studies based on their research in order to foreground the research questions around the responsible design, development and deployment of AI systems, while taking into account the legal, social and ethical aspects.  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 |

| Key accountabilities/primary responsibilities | | % Time |
| --- | --- | --- |
|  | To engage in high quality interdisciplinary research in the area of speech technologies, audio quality estimation, voice analysis, AI, which may include focus into primary areas such as deep learning, explainable AI, causal reasoning etc. while taking into account the legal, social and ethical aspects for responsible design, development and deployment of trustworthy AI systems. | 55% |
|  | To establish a national and international reputation through regular peer-reviewed dissemination across top conferences and journals relevant to the responsible AI systems agenda, including but not limited to deep learning, explainable AI, causal reasoning etc. | 10 % |
|  | Support the development of case studies in collaboration with Responsible AI UK partners. | 10% |
|  | Responsible for the organisation of workshops, working with the Edge AI Hub operations team to support specific Edge AI committees. | 10 % |
|  | Present work at venues (conferences and exhibitions) with more exposure to industry. | 5 % |
|  | Contribute to the process of securing further funding and assist the project PIs in management. | 5 % |
|  | Any other duties as allocated by the line manager following consultation with the post holder | 5 % |

| Internal and external relationships |
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| * Responsibility to the Southampton Co-Is. * Working with collaborators from across the Edge AI Hub. |

**PERSON SPECIFICATION**

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| Criteria | Essential | Desirable | How to be assessed |
| Qualifications, knowledge and experience | PhD or equivalent professional qualifications and experience in AI (deep learning, explainable AI, causal reasoning etc)  A track record of good publications at relevant international venues (conferences, journals) |  | CV or research portfolio |
| Planning and organising | Able to organise own research activities to deadline and quality standards |  | CV or research portfolio |
| Problem solving and initiative | Ability to design and develop algorithms, models, data analytics, and testbeds. | Skills in algorithm design, model design, empirical methods, explainable AI, causal reasoning. | CV or research portfolio |
| Management and teamwork | Work effectively in a team, understanding the strengths and weaknesses of others to help teamwork development | Experience supervising masters or PhD students. | CV and interview |
| Communicating and influencing | Able to present research results at group meetings and research conferences.  Excellent written and oral skills.  Communicate new and complex information effectively, both verbally and in writing, engaging the interest and enthusiasm of the target audience | Maintain an up-to-date website, publish updates through public venues including social media.  Able to both lead and collaborate on writing up research results for publication in leading peer-reviewed conferences and journals | Interview and research portfolio |
| Other skills and behaviours | Understanding of relevant Health & Safety issues  Positive attitude to colleagues and research trial participants |  | 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 |  |  |  |
| **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 |  |  |  |
| 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 |  | X |  |
| Lone working |  | X |  |
| ## Shift work/night work/on call duties |  |  |  |