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Job Description

**Research Fellow-Radar Systems for Sign Language Recognition**

Author: Shelly Vishwakarma

Standard Occupation Code: 2119 – Natural and social science professionals

School / Department: School of Electronics and Computer Science

Faculty / Directorate: Faculty of Engineering and Physical Sciences

Job Family: Education, Research and Enterprise (ERE)

Grade: Level 4

ERE Pathway (if applicable): Research

Post reporting to: Shelly Vishwakarma

Post line report(s):

Post base location: Highfield Campus, University of Southampton

Job purpose: **Research:**To contribute to the EPSRC-funded RADAR-SIGN-BRIDGE project by conducting research in radar signal simulation and validation for British Sign Language (BSL) recognition. This includes developing the LinguaRadar simulator, generating synthetic datasets, and validating them with real radar hardware. The role supports the wider aim of creating privacy-preserving communication technologies and will involve collaboration across interdisciplinary teams. The post holder will build research skills, experience, and networks, with appropriate guidance, support, and supervision.

**Leadership, Management and Engagement:**To independently plan and manage day-to-day research activities, contribute to project meetings and publications, and engage with internal and external partners. The post holder will contribute to open-source tools, public engagement events, and the broader research community under the direction of the Principal Investigator.

## Key accountabilities and indicative time allocation:

1. **70%**

**Research Contribution**:

* Develop and progress a personal programme of research and/or contribute as part of a team to a wider programme of research.
* Develop rigorous and original research contributions that lead to the discovery of new knowledge, insight and/or understanding.
* Regularly produce and/or contribute to research outputs, establishing visibility and credibility among subject-relevant research communities, within and beyond the University.
* Contribute to income proposals.
* Collaborate and network productively with colleagues in own and other departments, disciplines and/or organisations. Engage with a range of public groups, partners or organisations, as appropriate.
* Develop knowledge and understanding of research methodologies (e.g., testing, analysis, interpretation, critical evaluation); select and apply these effectively.
* Contribute to the effective co-creation, sharing of and engagement with research and research findings by a range of audiences (e.g., academic peers, practitioners, policymakers, publics), using a range of methods (e.g., peer-reviewed publications, conferences, public engagement, outreach, media releases).
* Ensure that research outputs are findable, accessible, interoperable and reproducible (FAIR) and, wherever possible, open access.
* Take opportunities to ensure research activities benefit educational practice.
* Contribute to the supervision of postgraduate students and/or research assistants.

1. **20%**

**Leadership, Management and Engagement Contribution**:

Building on the Leadership, Management and Engagement contributions inherent in other Level 4 activities:

* Plan and prioritise own work effectively.
* Undertake defined tasks and contribute effectively to team, department or School-level management, engagement, administration or project work.
* Contribute to short-term and medium-term planning.
* Develop an understanding of School, Faculty and University strategies and objectives.
* Contribute to the wider work of the Faculty and University through effective participation in working groups and committees (e.g., Equality, Diversity and Inclusion committees and self-assessment teams, Health and Safety committees, Research Ethics committees etc.).
* Advise and assist colleagues and students.
* Support and help ensure the health and wellbeing of colleagues.
* Mentor colleagues and support their development.
* Line manage or supervise staff, as appropriate.
* Effectively engage in probation, appraisal, career development and continuing professional development activities.
* Contribute to student recruitment activities.
* Help prepare for and/or participate in visit days, open days and public engagement activities
* Use discretion and judgement to select from or adapt existing processes and procedures to achieve outcomes.

1. **5%**

To allocate 10 days a year (pro rata if part-time) to undertake training and continuing professional development (CPD), develop research identity and leadership skills in line with the Researcher Development Concordat.

1. **5%**

Any other duties as allocated by the line manager following consultation with the post holder.

Internal and external relationships:

* Will work closely with the Principal Investigator and other members of the research group within the School of Electronics and Computer Science (ECS).
* Will collaborate with PhD students, postdocs, and academics across ECS, the School of Psychology, and the Digital Health and Biomedical Engineering Group.
* Will coordinate regularly with project partners at the University of Edinburgh (CSTR) and University College London (DCAL) to align technical development with linguistic and NLP requirements.
* Will engage with the University’s research support staff, including administrative, technical, and computing teams.
* May represent the University at academic conferences, workshops, and collaborative industry meetings, sharing project outcomes and establishing external contacts.

Special requirements:

* Must be available for occasional travel within the UK for project partner meetings and dissemination events (e.g. Naidex, Deaf Awareness Week).
* Expected to participate in experimental data collection, including radar hardware setup and human motion data acquisition sessions.
* May be required to undertake BSL awareness training (funded by the project) to support inclusive research practices.
* Will contribute to public engagement activities, including workshops and technology demonstrations for stakeholders and user communities.

# Person Specification – Skills and Competencies

All essential and desirable criteria outlined in this Person Specification will be assessed through a combination of recruitment application and CV, and where applicable numerical or written assessment.

**Knowledge, Experience and Qualifications**

Essential

* A PhD (or near completion) in Electrical/Electronic Engineering, Signal Processing, or a closely related field.
* Proven experience in radar system design, radar signal modelling, or signal simulation.
* Demonstrated ability to work independently on research tasks and manage research timelines.
* Strong programming skills in one or more of the following: Python, MATLAB, or C++.
* Ability to contribute to academic writing (e.g. peer-reviewed publications, technical reports).
* Strong communication skills and ability to work effectively in a collaborative, interdisciplinary team.

Desirable

* Familiarity with **motion capture** and animation tools such as OpenPose, MediaPipe, Blender, or Poser.
* Knowledge of radar-based human activity recognition or gesture recognition systems.
* Evidence of presenting research at national or international conferences.
* Experience working with mm-wave radar hardware (e.g., TI AWR2243 or similar).
* Awareness of inclusive design, accessibility technologies, or sign language recognition research.

**Teamwork and Communication**

Essential

* Ability to work collaboratively and respectfully in an interdisciplinary research team.
* Strong written and verbal communication skills, including the ability to explain technical concepts clearly.
* Demonstrated experience in contributing to research discussions, documentation, or collaborative outputs.
* Ability to engage with supervisors, collaborators, and stakeholders in a professional and timely manner.

Desirable

* Experience presenting research findings to academic and/or non-academic audiences.
* Evidence of collaboration with partners across different disciplines (e.g., engineering, linguistics, computer science).
* Experience engaging in outreach, public engagement, or user-driven research activities.
* Awareness of communication considerations when working with or designing for Deaf or hard-of-hearing communities.

**Planning, Organisation and Resource Management**

Essential

* Plans and progresses research activities within broad guidelines and established University procedures.
* Formulates personal development plans to address current skill needs and future goals.
* Demonstrates ability to prioritise tasks, manage time effectively, and meet project milestones.
* Maintains clear and accurate records of experiments, code, and project outputs in line with open science and reproducibility standards.

Desirable

* Experience coordinating data collection or managing experimental sessions (e.g., radar or motion capture experiments).
* Demonstrated ability to manage shared research resources or support junior team members.
* Familiarity with managing contributions to collaborative software repositories (e.g., GitHub, GitLab).
* Experience in preparing materials for research impact activities, workshops, or funding deliverable

# Job Hazard Assessment

For any hazards identified below a health clearance will be undertaken by our occupational health provider and form part of recruitment checks. Further ongoing clearance may be required for some roles, including for existing members of staff.

**Does the risk assessment identify the need for ongoing health surveillance for this role? No**

## Physical Environment

Working outsideNot applicable

Exposure to noise levels >80dbA Not applicable

Working with dust or fumes Not applicable

Working with skin irritants/sensitisersNot applicable

Working with chemicals (industrial or cleaning)Not applicable

Working in a confined spaceNot applicable

Working at heightNot applicable

Working with sewage Not applicable

Contact with cytotoxinsNot applicable

Exposure Prone Procedure (EPP) work Not applicable

Direct patient care or patient contact / Contact with clinical  
specimens or pathology work Not applicable

Ionising radiation Not applicable

## Psychological and Social Environment

Working shifts Not applicable

Working nightsNot applicable

Lone working Not applicable

Working with children Not applicable

Exposure to persons with challenging behaviourNot applicable

## Equipment, Tools and Machines

Working with vibrating machinery or toolsNot applicable

Driving duties Not applicable

Driving LGV, PCVs Not applicable

Driving forklift trucks Not applicable

Food handling Not applicable

Contact with latexNot applicable

## Physical Abilities

Prolonged repetitive movements or actions Not applicable

Moving or handling heavy loadsNot applicable

# Behaviours

Our [Inclusion and Respectful Behaviour Policy](https://www.southampton.ac.uk/about/governance/regulations-policies/policies/inclusion-respectful-behaviour) describes the expectations of everyone who is a part of our community.

Our **Southampton Behaviours** (below) outline the responsibilities we each have in working collaboratively to achieve our University strategy.

**Personal Leadership**

- I take personal responsibility for my own actions and an active approach towards my development.

- I reflect on my own behaviour, actively seek feedback and adapt my behaviour accordingly.

- I demonstrate pride, passion and enthusiasm for our University community.

- I demonstrate respect and build trust with an open and honest approach.

**Working Together**

- I work collaboratively and build productive relationships across our University and beyond.

- I actively listen to others and communicate clearly and appropriately with everyone.

- I take an inclusive approach, value the differences that people bring and encourage others to contribute and flourish.

- I proactively work through challenge and conflict, considering others’ views to achieve positive and productive outcomes.

**Developing Others**

- I help to create an environment that engages and motivates others.

- I take time to support and enable people to be the best they can be.

- I recognise and value others’ achievements, give praise and celebrate their success.

- I deliver balanced feedback to enable others to improve their contribution.

**Delivering Quality**

- I identify opportunities and take action to make improvements.

- I plan and prioritise efficiently and effectively, taking account of people, processes and resources.

- I am accountable for tackling issues, making difficult decisions and seeing them through to their conclusion.

- I encourage creativity and innovation in others, to deliver workable solutions.

**Driving Sustainability**

- I consider the impact on people before taking decisions or actions that may affect them.

- I embrace, enable and embed change effectively.

- I regularly take account of external and internal factors, assessing the need for change, and gaining support to move forward.

- I take time to understand our University strategy and communicate this to others.