UNIVERSITY OF SURREY

Research Role Profile

Job Title:	Research Fellow in *Generative Audio for Immersive Sound Design*

Responsible to:	Head of research group, or principal investigator

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. The post holder may work on original research tasks with colleagues in other institutions.

Special Requirements
To be available to participate in fieldwork as required by the specified research project

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.

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 *Generative Audio for Immersive Sound Design*

Background Information/Relationships

The [Surrey Institute for People-Centred Artificial Intelligence](#) (PAI) was founded in 2021 to shape the future of AI for the benefit of people and society, building on four decades leading fundamental AI research through the [Centre, for Vision Speech and Signal Processing](#) (CVSSP), together with pan-University strengths across arts, humanities, law, business, health and engineering sciences. Research has led to award-winning creative industry AI technologies and ranks 1st in the UK for Computer Vision and Audio-Visual AI (csranking.org). At the outset, PAI was backed by strategic University investment for 18 new academic posts, cross-disciplinary collaboration facilities and state-of-the-art AI compute. PAI now includes 120 academics leading >£100m in people-centred AI research, including AI for media personalisation (AI4ME), content creation (DECaDE), sign-language understanding and language accessibility. PAI is a lead partner in the AHRC CoSTAR National Lab for Creative Industry R&D, the URKI AI Centre for Doctoral Training (CDT) in AI for Digital Media Inclusion and Leverhulme Training Network in AI-enabled Digital Accessibility (ADA). PAI leads a cross-disciplinary MSc in AI attracting a diverse intake to study foundational AI methods, responsible AI, and applications from health to sustainability and business. PAI strategic themes of research include Trustworthy & Responsible AI, AI for Education, Information & Entertainment, AI for Health and Wellbeing, Human-AI Interaction & Cooperation, Human-AI Interaction & Cooperation, AI for Industry 5.0, Sustainable AI and AI for Clean Air Systems.

The [CoSTAR National R&D Lab](#) for Creative Industries Research and Development is a £51.1m investment by the UK Government in Applied Research to ensure the UK's screen and performance industries have the research infrastructure and the research and innovation skills to compete globally. The CoSTAR National Lab is led by StoryFutures Royal Holloway, University of London, in partnership with University of Surrey, Abertay University, the National Film and Television School, Pinewood Studios, BT and Disguise. The consortium combines world-leading research teams from media production, psychology, business and drama at Royal Holloway, AI at University of Surrey; creative technology at Abertay University; professional training at the National Film & Television School. The CoSTAR National Lab is part of a CoSTAR national network comprising the National Lab, three Network Labs and a Foresight Lab, with £75.6M of funding from AHRC, with additional private co-investment. CoSTAR aims to create an innovation architecture to enable UK screen and

performance sectors to lead the world in future waves of advanced media technologies. We will do so by placing our nations' leading-edge advantage in storytelling IP at the core of the National Lab, providing a unique catalyst for innovation that is unmatched anywhere in the world.

This role forms part of the audio team and sits with the Creative AI activity, led by the University of Surrey, of the CoSTAR National Lab for creative industries research and development.

The role will contribute research, development, deployment and creative use as part of the CoSTAR National Lab R&D programme in collaboration with creative industry and academic partners. The purpose of this role is to enable creative industries R&D to access and leverage advanced generative AI technologies in sound design for the production of immersive and interactive experiences.

The post holder will be based in Guildford at the Surrey Institute for People-Centred AI and may be expected to work on location at the CoSTAR National Lab, and partners sites (e.g., at RHUL in Egham, Pinewood or Production Park) according to requirements for collaboration and programme delivery.

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
Expertise in machine learning for audio, including audio-visual research and deep learning methods for audio, speech or music generation (e.g. diffusion or transformer–based models).	E
Strong programming skills, particularly in Python, with experience using ML frameworks such as PyTorch or TensorFlow, and real-time audio software (e.g., DAW plugins, MaxMSP, game engine audio).	E
Ability to work with and curate audio datasets, including audio-visual or multichannel/spatial recordings, and to design appropriate training and evaluation pipelines.	E
Research experience demonstrated through publications in relevant areas such as generative AI, speech/audio signal processing, machine listening or immersive media.	E
Experimental systems development skills, enabling implementation, integration and evaluation of interactive or real-time audio systems.	E
Strong communication skills, with the ability to document research code and data, write papers, report to stakeholders, and collaborate across technical and creative disciplines	E

Sound analysis, synthesis and quality evaluation knowledge, covering sound events, soundscapes, speech, acoustic features and perceptual metrics and subjective methodologies	D
Experience in participatory research, such as formal listening tests and co-design workshops, statistical analysis and ethics review	D
Strong critical thinking skills and ability to develop collaborative solutions	D
Experience with audio demonstration to creative industry, policy makers and other non-academic stakeholders	D
Ability to take initiative, learn how to use the necessary tools for the research, and work independently, and collaboratively for integration tasks	D

Key Responsibilities

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

1. To research and develop generative audio AI workflows, tools and technologies for creative audio-visual media applications;

2. To contribute to CoSTAR R&D programmes, working across institutions within the audio team, with the Creative AI team, in collaboration with the CoSTAR National Lab, Network Labs and creative industry partners;

3. To work closely with members of the audio team on the research, development, demonstration and deployment of software tools and technologies;

4. To pursue and advocate responsible and open AI research and innovation to ensure ethical, fair and inclusive advances in science, technology and use of AI and data;

5. To develop new concepts and ideas to extend intellectual understanding. Assess, interpret and evaluate the outcomes of research, and develop ideas for the application of research outcomes in the creative industries;

6. To take a leading role in the regular reporting, demonstration, dissemination and publication of results in appropriate journals, academic and industry forums, giving presentations at national and/or international conferences, and in other formats;

7. To contribute to CoSTAR audio system infrastructure including designs, development of methods, facilities management, user training and support;

8. To collaborate with the CoSTAR research project team across multiple university and industry partners on joint research initiatives and integration activities to develop new workflows, tools, technology demonstrations and experiences;

9. To contribute to CoSTAR IP protection and/or open-source release of tools and technologies;

10. To contribute to supervision and mentoring of other researchers including PhD research students in the areas of audio and creative AI.

N.B. The above list is not exhaustive.

Research Role Profile

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.

- To work to achieve the aims of our Environmental Policy and promote awareness to colleagues and students.

- To follow University/departmental policies and working practices in ensuring that no breaches of information security result from their actions.

- To ensure they are aware of and abide by all relevant University Regulations and Policies relevant to the role.

- To undertake such other duties within the scope of the post as may be requested by your Manager.

- To work supportively with colleagues, operating in a collegiate manner at all times.

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.

- By following local codes of safe working practices and the University of Surrey Health and Safety Policy.

<u>Organisational Structure Chart</u>