Post Details	Last Updated 27/5/2025		
Faculty/Administrative/Service Department	Institute of Sound Recording (IoSR)		
Job Title	Research Infrastructure Engineer in Audio and Acoustics		
Job Family	Technical and Experimental	**Job Level**	4
Responsible to	Prof Enzo De Sena		

Job Purpose Statement

The role will be part of the core delivery team for AURORA³, a newly funded strategic infrastructure project in audio, acoustics, and AI. The appointed engineer will:

- Contribute to the technical design, software integration, research methodologies, and operational procedures, ensuring AURORA³ meets diverse experimental needs.
- Support internal and external researchers through technical support, training, documentation, design and execution of experiments.
- Advance the facility's capability by maintaining and updating the equipment hosted within AURORA^3.
- (Depending on experience) co-author technical outputs such as academic papers, datasets and operating instructions and/or co-write grant proposals to ensure the sustainability of AURORA³.

The post holder will be based in the Institute of Sound Recording. On-site presence will be required for many aspects of the role, but (UK-based) hybrid working arrangements may be possible where operational needs allow, especially during the initial infrastructure set-up stage.

Key Responsibilities

Physical Design & Integration
Provide technical input to help shape the design and construction of the research facility, ensuring acoustic and structural elements meet researchers' needs. Coordinate with contractors, architects, stakeholders and internal teams to integrate equipment, infrastructure, and workflows smoothly.

Software Design & Development
Develop research software tools and online portals that enable efficient bookings, data exchange, and facility control. Implement and maintain automated testing features—such as calibration routines—to support a variety of research setups. Manage code repositories and continuous integration (CI/CD) workflows for facility-related software tools.

Operational Procedures & Ethical Compliance
Implement practical frameworks for participant recruitment, data handling, and research governance. Establish clear procedures for facility access, scheduling, and record-keeping, making sure all processes remain complaint with relevant guidelines and regulations. Design standard experiment types (SETs) to streamline execution of typical experiment types. Promote inclusive and accessible research practices. Champion open research and data-sharing where possible, in line with UKRI guidelines.

Technical & User Support
Serve as the primary technician for AURORA³, offering hands-on support to staff, students, and external researchers. Assist with setting up experiments, troubleshooting technical issues, and coordinating facility bookings. Develop and deliver training materials or sessions that empower users to make full use of the facility's capabilities.

Conducting Objective & Subjective Experiments
Plan and execute objective and subjective experiments. Provide practical assistance in data collection, ensuring experiments run smoothly and produce reliable results. Offer guidance on experimental design where needed, maintaining best practices for reproducibility.

Equipment Maintenance & Updates
Oversee the upkeep of the facilities, including its hardware (e.g., microphones, loudspeakers, computing systems)

by responding to user issue reports, scheduling routine checks and repairs. Keep thorough documentation of assets. Liaise with stakeholders and vendors for upgrades.

Research Collaboration and Management (depending on experience)
Lend support to collaborative research projects, co-authoring papers or datasets where appropriate. Contribute to the creation of open-source tools and documentation. Mentor PhD students, and early-career researchers in technical methods, software practices, and project management. Shape the strategic vision of the facility, identifying new research avenues, writing/leading grant proposals, and forging new collaborations. Oversee budgets, manage risk assessments, and coordinate with senior management to ensure the facility remains cutting-edge and self-sustaining.

N.B. The above list is not exhaustive.

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.
- Work to achieve the aims of our Environmental Policy and promote awareness to colleagues and students.
- Follow University/departmental policies and working practices in ensuring that no breaches of information security result from their actions.
- Ensure they are aware of and abide by all relevant University Regulations and Policies relevant to the role.
- Undertake such other duties within the scope of the post as may be requested by your Manager.
- 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.
- Following local codes of safe working practices and the University of Surrey Health and Safety Policy.

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Person Specification		
Qualifications and Technical Skills		
Master's degree in engineering, physics or a related subject, or equivalent professional experience		E
PhD degree in a relevant area (e.g., Acoustics, Audio Engineering, Signal Processing)		D
Technical Competencies (Experience and Knowledge) This section contains the level of competency required to carry out the role (please refer to the Competency Framework for clarification where needed and the Job Matching Guidance).	**Essential/ Desirable**	**Level 1-3**
Strong technical audio engineering background (e.g., acoustics, electronics, recording, calibration, measurements, signal processing).	E	3
Excellent software development skills using relevant languages (e.g. Python, C++), ideally in the context of audio signal processing methods. Familiarity with tools for source code management (e.g. GitHub), automation pipelines for software development and deployment.	E	3
Experience in communicating effectively and working efficiently within a team. Experience in taking initiative, learning how to use necessary tools, and working independently, and collaboratively. Excellent problem solving and critical thinking skills, and ability to develop innovative solutions.	E	3
Experience in technical writing, e.g., technical reports, dissertations, operating instructions (essential). Peer-reviewed research publications are desirable, but not essential.	E	2
Direct research experience, or experience of software development while working closely with researchers, on relevant topics (e.g. audio signal processing, machine learning or deep learning methods applied to audio).	D	2
Experience with designing and carrying out subjective listening experiments.	D	2
Core Competencies		**Level 1-3**
Communicator		3
Flexible		2
Team Player		3
Proactive		3
Problem Solver		3
Creative and Analytical Thinker		2
Autonomous		3

This Job Purpose reflects the core activities of the post. As the Department/Faculty and the post holder develop, there will inevitably be some changes to the duties for which the post is responsible, and possibly to the emphasis of the post itself. The University expects that the post holder will recognise this and will adopt a flexible approach to work. This could include undertaking relevant training where necessary.

Should significant changes to the Job Purpose become necessary, the post holder will be consulted and the changes reflected in a revised Job Purpose.

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Organisational/Departmental Information

Background Information

AURORA^3 is a new strategic facility at the University of Surrey designed to support cutting-edge research in audio, acoustics, and machine learning (ML). It will incorporate a state-of-the-art acoustic anechoic chamber equipped with a spherical loudspeaker array and a world-first variable acoustics room combining adjustable wall panels and a moving wall system, enabling room volume and reverberation times to be precisely controlled. Our vision for AURORA^3 is to bring the A^3 (audio, acoustics and AI) community together, produce high-quality data resources that enable substantial advances in the development of technologies and science relating to sound and hearing, and foster a mindset that encompasses considerations of inclusion, rigorous inquiry and pathways for realising societal and economic benefit.

AURORA^3 will establish National Strategic Infrastructure, accessible to researchers in industry and academia alike. It is supported by a £2.2 million investment from the Engineering and Physical Sciences Research Council (EPSRC), in addition to significant contributions from the University of Surrey and the 18 AURORA^3 partners.

AURORA^3 will be hosted by the Institute of Sound Recording (IoSR). The IoSR is an internationally-leading centre for research in acoustic engineering. Established in 1998, it comprises a team of 7 PhD students, 2 research fellows, and 4 academics, currently supported by £4.4 millions of research funding. The IoSR is also home to the world-renowned Tonmeister degree in Music and Sound Recording, which has produced a stream of highly successful graduates who have collectively received numerous accolades, including three Oscars, twelve Grammys, six Emmys, and twelve BAFTAs.

AURORA^3 is a project in collaboration with the Centre for Vision, Speech and Signal Processing (CVSSP). CVSSP is ranked first in the UK for computer vision research and is globally recognised for pioneering 3D computer vision and spatial audio. CVSSP is the founder of the Surrey Institute for People-Centred AI (PAI), a pan-university institute, bringing together core AI-related expertise in audio-visual and signal processing, computer science, and mathematics. PAI aims to foster advances in human-centric AI and hosts the new £8 million CoSTAR AI compute facility.