### Research Role Profile

<table>
<thead>
<tr>
<th><strong>Job Title:</strong></th>
<th>Research Fellow (1A)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Responsible to:</strong></td>
<td>Head of research group, or principal investigator</td>
</tr>
<tr>
<td><strong>Responsible for:</strong></td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**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.
Research Role Profile

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 Role Profile.

Job Title: Research Fellow in Timbral Modelling

Background Information/Relationships

EU-funded project “Audio Commons: An Ecosystem for Creative Reuse of Audio Content”.

The aim of this project is to develop systems and technologies to facilitate the integration of Creative Commons licensed audio content into the workflows of the creative industries, enabling such content to be created, accessed, retrieved and reused in innovative ways. The project will address the creative, technical, legal and business-related challenges presented by this aim.

The specific objective of the team with which the Research Fellow will work is to develop a system to timbrally characterise audio (in a non-musical context) such that timbral descriptors can be added to content automatically. The work will involve:

- profiling of existing timbral metadata to determine target attributes for annotation;
- determination of correlations between extractable audio parameters and perception of target attributes;
- development, coding & evaluation of models of perception of target attributes; and
- documentation of findings.

The project involves the Centre for Vision, Speech and Signal Processing (CVSSP) and the Centre for the Digital Economy (CoDE) at Surrey. More widely, the project includes collaboration with Universitat Pompeu Fabra (Barcelona) and Queen Mary University of London, along with a number of commercial partners. Hence, the role is likely to involve travel to regular meetings with the project partners in Europe. The post holder will also be required to publish the outcomes of the research at a range of international conferences.

The project runs for 36 months from 1 February 2016. This post is available for 30 months from 1 July 2016, with the possibility of a short extension subject to funding.

For 6 months of the project, a Research Fellow will be available in CVSSP to contribute signal processing expertise, e.g. to assist with more problematic parameter extraction.

Research Leader for this post: Dr Tim Brookes (IoSR).

Co-Supervisor for this post: Dr Russell Mason (IoSR).

Research Leader for DSP RF: Dr Wenwu Wang (CVSSP).

Lead researcher at Surrey: Prof Mark Plumbley (CVSSP).

Project PI: Dr Xavier Serra (MTG, UPF, Barcelona).
Research Role Profile

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 Role Profile.

| Essential/ Desirable | Doctoral level research in relevant area | Expertise in psychoacoustics and acoustics, with an understanding of factors likely to be related to timbral perception | Ability to work independently, with strong organisational and time management skills | Skills and experience in the design and execution of listening-based elicitation and scaling experiments | Skills and experience in statistical analysis and modelling | Strong writing skills for audiences of varying levels of technical expertise | Skills and experience in programming in one or more of Python, C++, MATLAB | Skills and experience specifically in modelling of timbral perception | Skills and experience in programming in one or more of Max/MSP, PureData | Academic publications in a relevant area | Skills and experience in semantic profiling of verbal datasets |
|----------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| E                    | E                                      | E                                                                                | E                                                                                | E                                                                                | E                                                                                | E                                                                                | E                                                                                | E                                                                                | E                                                                                | E                                                                                | E                                                                                |

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 (5 to 8 maximum). This should be read in conjunction with those contained within the accompanying generic Role Profile.

1. Profile existing timbral metadata to formulate structured list of target attributes.
2. Design and execute listening-based elicitation and scaling experiments; conduct appropriate statistical analysis of experiment results; combine experiment findings with acoustic and psychoacoustic theory to develop perceptual models; evaluate perceptual models against data elicited from human listeners; code perceptual models in a format suitable for integration into the larger, project-wide, audio production systems (e.g. as VAMP plug-ins), liaising with other researchers on project as required.
3. Report findings verbally and in writing, to project team and industrial partners, on public-facing websites, in seminars and at conferences, in academic journals, and to the funder; report at both a technical low-level and a conceptual high-level to a range of audiences including the public and industry.
4. Meet on a regular basis with local research leaders and project team; attend wider project meetings to present and discuss results at Surrey and other sites; participate in secondments at partner sites to conduct research and integration activities as required; participate in workshop, demonstration and other project activities as required.
5. Plan own day-to-day research activity within the framework of the agreed programme, dealing with problems that may affect the achievement of research objectives and deadlines and implementing procedures required to ensure accurate and timely delivery.
6. Carry out routine administrative tasks, including: booking of equipment and facilities,
organisation of travel, regular archival of data, updating of data on central project management systems (task progress, reports, deliverables, etc.)

7. Continually update knowledge and develop skills relevant to the project

N.B. The above list is not exhaustive.