

APP33081: Determining the approach, scale and feasibility for developing the Tape Archive Analysis Toolkit (TAAT)

Check application

Status: **SUCCESSFUL**

Application

Application reference

APP33081

Application name

Determining the approach, scale and feasibility for developing the Tape Archive Analysis Toolkit (TAAT)

Applicant

Samuel Gillies

Organisation

University of Huddersfield

Application status

Successful

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Successful

Determining the approach, scale and feasibility for developing the Tape Archive Analysis Toolkit (TAAT)

1. Details

Summary

This project is to determine the scale and feasibility for developing a bespoke toolset (Tape Archive Analysis Toolkit – TAAT) that will analyse large audio datasets derived from analogue sources to aid researchers in determining new musicological insights and archives in effectively cataloguing and deriving meaning from their digital collections.

The Project Lead has worked on two previous AHRC funded research projects which produced 400+ hours of digitised audio files from reel-to-reel tape archives of historical electronic music composers in England. These materials cover final versions of compositions as well as working materials, intermediate materials, intermediate mixes, draft recordings, and pre-existing works from other composers or radio broadcasts. The potential network of relationships posed by this collection is vast and potentially of great value to musicologists, archives, and libraries in developing new insights and communicating musical histories to the public. However, the quantity of material is beyond the scope of an individual to meaningfully make sense of. To effectively organise this material a bespoke toolset is needed to analyse this collection of audio and determine

1. Where there are relationships between segments of audio files, and
2. What the differences are between two related audio recordings

The field of audio data analysis is a large and highly commercialised one. Toolsets exist that can comprehend connections between large audio datasets range for compositional use (eg: FluCoMa, CataRT) and information retrieval (MIR, propriatry algorithms for applications such as Shazam and Spotify). However, existing commercial and non-commercial tools are not developed for the analysis of tape archives. Existing toolsets are not able to effectively analyse collections of this size and type. Such tools are developed to compare perfect digital audio files and the process of digitisation from historical analogue materials to digital audio files unavoidably introduces significant variance to the signal (unpredictable fluctuations in pitch, tone saturation, frequency filtering). This means that two instances of the same recording can fail to be recognised as related when using existing tools.

TAAT will address this shortcoming and find new strategies for recognising relationships between digitised audio files. Over 12 months of dedicated development, a number of approaches will be implemented and tested – including signal comparison within the time and frequency domain, Music Information Retrieval analysis, and neural networks – using materials from the existing large audio

databases in the Roberto Gerhard and Ernest Berk tape archives. Methods will be tested and modified in order to ascertain the most effective path forward to develop new processes for the analysis of large audio archives derived from analogue sound sources. The project team will include a musicologist who will apply the TAAT to new contexts and provide feedback to the project team. This project will act as a trial for the development of future research in both digital archive management and the creation of new musicological knowledge in the field of England’s electronic music history and to make sense of the masses of recorded materials in archive collections around the world.

Start date

January 2025

Duration

12 months

2. Core team

Name	Role	Organisation
Samuel Gillies	Project lead	University of Huddersfield
		University of Huddersfield
		University of Huddersfield
		University of Huddersfield

3. Discipline classification – primary

Application question

Please provide the primary research area of your proposal.

You must select only **one** of these research disciplines.

This information will be used for the purposes of processing your proposal and in the selection of appropriate assessors. The research disciplines are:

- archaeology
- area studies
- classics
- cultural and museum studies
- dance
- design
- development studies
- drama and theatre studies
- education
- history
- human geography
- information and communication technologies
- languages and literature
- law and legal studies
- library and information studies
- linguistics
- media
- music
- philosophy
- political science and international studies
- social anthropology
- theology, divinity and religion
- visual arts

Music

4. Discipline classification – secondary

Application question

Please describe, using keywords, the research area of your proposal and where relevant the approach, time, or geographical area.

This will further help with the selection of appropriate assessors.

Audio Archives, Audio Analysis, Tape Analysis, Historical Analysis, Electronic Music Analysis

5. Vision

Application question

What are you hoping to achieve with your proposed work?

Explain how your proposed work:

- is of excellent quality and importance within or beyond the fields or areas
- has the potential to advance current understanding, or generate new knowledge, thinking or discovery within or beyond the field or area
- is timely given current trends, context, and needs
- impacts world-leading research, society, the economy, or the environment

Within the Vision section we also expect you to:

- identify the potential direct or indirect benefits and who the beneficiaries might be

Within this section you can also demonstrate elements of your responses in visual form if relevant.

You must:

- use images sparingly and only to convey important information that cannot easily be put into words
- insert each new image onto a new line
- provide a descriptive legend for each image immediately underneath it (this counts towards your word limit)

Files must be:

- in JPEG, JPG, JPE, JFI, JIF, JFIF, PNG, GIF, BMP or WEBP format
- be smaller than 5MB

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



6. Approach

Application question

How are you going to deliver your proposed work?

Explain how you have designed your approach so that it:

- is effective and appropriate to achieve your objectives
- is feasible, and comprehensively identifies any risks to delivery and how they will be managed
- uses a clearly written and transparent methodology (if applicable)
- summarises the previous work and describes how this will be built upon and progressed (if applicable)
- will maximise translation of outputs into outcomes and impacts
- describes how your, and if applicable your team's, research environment (in terms of the place and relevance to the project) will contribute to the success of the work

Within this section you can also demonstrate elements of your responses in visual form if relevant.

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[REDACTED]

[REDACTED]

[REDACTED]

7. Applicant and team capability to deliver

Application question

Why are you the right individual or team to successfully deliver the proposed work?

Evidence of how you, and if relevant your team, have:

- the relevant experience (appropriate to career stage) to deliver the proposed work
- the right balance of skills and expertise to cover the proposed work
- the appropriate leadership and management skills to deliver the work and your approach to develop others
- contributed to developing a positive research environment and wider community

The word count for this section is 1,500 words: 1,000 words to be used for R4RI modules and, if necessary, a further 500 words for Additions.

Use the Résumé for Research and Innovation (R4RI) format to showcase the range of relevant skills you and, if relevant, your team (project and project co-leads, researchers, technicians, specialists, partners and so on) have and how this will help deliver the proposed work. You can include individuals' specific achievements but only choose past contributions that best evidence their ability to deliver this work.

Complete this section using the R4RI module headings listed. Use each heading once and include a response for the whole team, see the [UKRI guidance on R4RI](https://www.ukri.org/apply-for-funding/before-you-apply/resume-for-research-and-innovation-r4ri-guidance/#:~:text=UKRI%20committed%20to%20adopting%20a,UKRI%20throughout%202022%20and%202023.) (<https://www.ukri.org/apply-for-funding/before-you-apply/resume-for-research-and-innovation-r4ri-guidance/#:~:text=UKRI%20committed%20to%20adopting%20a,UKRI%20throughout%202022%20and%202023.>). You should consider how to balance your answer, and emphasise where appropriate the key skills each team member brings:

- contributions to the generation of new ideas, tools, methodologies, or knowledge
- the development of others and maintenance of effective working relationships

- contributions to the wider research and innovation community
- contributions to broader research or innovation users and audiences and towards wider societal benefit

As a minimum, all named members of the Leadership Team should be discussed within this section of the form.

If references or citations are deemed appropriate, these should be included within the section's word limit. We would advise you not to include hyperlinks, as assessors are not obliged to access the information they lead to or consider it in their assessment of your application. If you are linking to web resources, to maintain the information's integrity, include persistent identifiers (such as digital object identifiers) where possible. You must not include links to web resources to extend your application.

Additions

Provide any further details relevant to your application. This section is optional and can be up to 500 words. You should not use it to describe additional skills, experiences, or outputs, but you can use it to describe any factors that provide context for the rest of your R4RI (for example, details of career breaks if you wish to disclose them).

Complete this as a narrative. Do not format it like a CV.

UK Research and Innovation (UKRI) has introduced new role types for funding opportunities being run on the new UKRI Funding Service. For full details, see [Eligibility as an individual](https://www.ukri.org/publications/roles-in-funding-applications/) (<https://www.ukri.org/publications/roles-in-funding-applications/>).

Within this section you can also demonstrate elements of your responses in visual form if relevant.

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Sam Gillies (SG)

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[REDACTED]

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[REDACTED]

8. Project partners

No project partners.

9. Project partners: letters (or emails) of support

Application question

Upload a single PDF containing the letters or emails of support from each partner you named in the Project Partner section.

Enter the words 'attachment supplied' in the text box, or if you do not have any project partners enter N/A. Each letter or email you provide should:

- confirm the partner's commitment to the project
- clearly explain the value, relevance, and possible benefits of the work to them
- describe any additional value that they bring to the project
- be no more than two sides of A4 per partner

Save letters or emails of support from each partner in a single PDF no bigger than 8MB.

Ensure you have prior agreement from project partners so that, if you are offered funding, they will support your project as indicated in the contributions template.

For audit purposes, UKRI requires formal collaboration agreements to be put in place if an award is made.

Do not provide letters of support from host and project co-leads' research organisations.

N/A

10. Ethics and responsible research and innovation (RRI)

Application question

What are the ethical or RRI implications and issues relating to the proposed work? If you do not think that the proposed work raises any ethical or RRI issues, explain why.

If you do not think that the proposed work raises any ethical or RRI issues, explain why.

Demonstrate that you have identified and evaluated:

- the relevant ethical or responsible research and innovation considerations
- how you will manage these considerations

If you are collecting or using data, identify:

- any legal and ethical considerations of collecting, releasing or storing the data including consent, confidentiality, anonymisation, security and other ethical considerations and, in particular, strategies to not preclude further re-use of data
- formal information standards with which your study will comply

Within this section you can also demonstrate elements of your responses in visual form if relevant.

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11. Resources and Cost

Total full economic costs (fEC)

£98,303

Total contribution from applying organisation(s)

£19,660.60

Total funding applied for

£78,642.40

Directly allocated

Cost categories

Category	Applied for
Staff	

Category	Applied for
Estates	[REDACTED]
Other	

Staff breakdown

Name	Role	%FTE
Samuel Gillies	Project lead	[REDACTED]
[REDACTED]		

Directly incurred

Cost categories

Category	Applied for
Staff	[REDACTED]
Equipment	
Travel and subsistence	
Other	

Staff breakdown

Name	Role	%FTE
[REDACTED]		

Indirect

Cost categories

Category	Applied for
Indirect costs	[REDACTED]

Staff breakdown

No staff for this category

Exceptions

Cost categories

Category	Applied for
Staff	
Equipment	–
Travel and subsistence	
Other	–

Staff breakdown

No staff for this category

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Justification of resources

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]
