

Participant Information Sheet

Personalised Audio Deepfake Detection: A Human Enrolment Study

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Invitation

You are being invited to participate in a research study. Before you decide whether you wish to take part, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully and discuss it with others if you wish. Ask us questions if there is anything that is not clear or if you would like more information. Please note that participation is entirely voluntary and refusal to participate requires no reason and will not affect you or your rights.

What is the purpose of the study and what would taking part involve?

This study is testing a system that detects fake (computer-generated) audio. The system can work in two ways: a general mode that detects fake audio without knowing who the speaker is, and a personalised mode that uses a recording of your voice to improve detection. We want to find out whether the personalised mode performs better, and how it compares to human ability to spot fake audio. Taking part in this study involves a single online session that will take you approximately 10-15 minutes to complete.

- You will be asked to read and agree to a consent form through the study web application
- You will then be asked to record yourself reading 5 short sentences aloud using your device's microphone using the study web application. You will be able to listen back and re-record if needed.
- Your recordings will be used to create a numerical voice profile (a string of numbers that represents the characteristics of your voice) that will be used to customise the detection model to help it do a better job detecting fake audio recordings of your voice specifically
- An open source voice cloning system running locally on the student researcher's machine will be used to generate synthetic (fake) versions of your voice using your recordings. These will be generated entirely on the student researcher's local hardware and data will not be sent to any external services. They will be used solely to test whether the detection system can tell them apart from your real voice. All audio samples (real and fake) will be deleted once the study ends.
- At the end of the session, you will be given the option to provide your email address if you would like to be invited to a separate follow-up listening test to see how accurately you can tell apart real and fake audio samples. This is entirely optional and your email will be stored completely separately with no link to your voice recordings.

You will be asked to read the following sentences:

1. "The morning sun cast a warm golden light over the quiet village as the birds began to sing"
2. "She picked up the heavy box from the table and carried it carefully through the narrow hallway"
3. "Please remember to bring your jacket with you today because the weather may change later this evening"
4. "The children laughed and played together in the open field just behind the old village school"
5. "I would like a fresh cup of coffee with just a small amount of sugar and a dash of milk please"

Why am I being invited?

You are being invited to participate in this research study because you are over the age of 18 and are able to read and speak English aloud. You should not take part in this study if you have a speech or hearing impairment that would prevent you from clearly recording your voice or listening to audio clips.

Do I have to take part?

This participant information sheet has been written to help you decide if you would like to take part. It is completely up to you whether you wish to take part in this study. If you do decide to take part, you will be free to withdraw at any time during your participation without needing to provide a reason, and with no penalties or detrimental effects.

What are the possible benefits of taking part?

There are no direct benefits to you personally for taking part. However, your participation will contribute to research on protecting people from voice-based scams and impersonation attacks (known as “vishing”). You will also have the opportunity to test your own ability to detect fake audio.

What are the possible disadvantages and risks of taking part?

The risks of taking part are minimal. You will be asked to record your voice while reading sentences presented to you on a screen. As your voice is a sensitive piece of personally identifiable information, all due care will be taken to protect it. All voice data will be stored under an anonymous identifier which will not be linked to your name or be in any published results. Your voice will not be used to generate potentially offensive or defamatory synthetic audio clips, and all voice recordings and generated audio will be deleted once the study concludes.

Expenses and payments

There are no expenses or payments associated with this study.

What information about me will you be collecting?

- Audio recordings of you reading 5 sentences aloud
- A numerical voice profile (1696-dimensional embedding vector) computed from your recordings. This is a string of numbers representing your unique voice characteristics and cannot be used to reconstruct your speech
- Optionally, your email address if you choose to be contacted about the follow-up listening test.

How will my data be stored and who will have access to it?

Your voice data and generated deepfakes will be stored in a secure locally hosted Postgres database that only the research team have access to. Your data will be stored in a de-identified format; your name and other identifiers will be replaced by a unique anonymous code. If you choose to provide your email address for the follow-up study, it will be stored in a separate database table with no connection to your anonymous code or voice data, and will only be used to contact you regarding the follow-up study. The data will only be accessible to the research team.

When and how will my data be destroyed?

Raw audio recordings and generated synthetic audio will be deleted within 14 days of the study’s completion. Email address data will be deleted immediately after the follow-up study concludes.

How will my data be used and shared?

The results of this study will be reported in the researcher's final project report with only anonymised data being reported. Audio clips from your recordings may be presented to other participants as part of the follow-up study listening task.

Under what legal basis are you collecting this information?

- Queen Mary University of London processes personal data for research purposes in accordance with the lawful basis of 'public task'.
- Please read Queen Mary's privacy notice for research participants containing important information about your personal data and your rights in this respect.
- If you have any questions relating to data protection, please contact Queen Mary's Data Protection Officer, Queens' Building, Mile End Road, London, E1 4NS or data-protection@qmul.ac.uk or 020 7882 7596.

What will happen if I want to withdraw from this study?

You can withdraw from the study at any time without giving a reason. If you withdraw, all of your data, including audio recordings, generated synthetic audio, voice profile embeddings, and listening task responses will be permanently deleted within 7 days. You may request withdrawal up to 14 days after your participation in stage 2, after which your anonymised data may already have been included in the analysis and can no longer be individually removed.

What should I do if I have concerns about this study?

- If you have any concerns about the manner in which the study was conducted, in the first instance, please contact the researcher(s) responsible for the study Soumya Sai Vanka (s.s.vanka@qmul.ac.uk)
- If you have a complaint which you feel you cannot discuss with the researchers then you should contact the Research Ethics Facilitators by e-mail: research-ethics@qmul.ac.uk.
- When contacting the Research Ethics Facilitators, please provide details of the study title, description the study and QM REC reference number (where possible), the researcher(s) involved, and details of the complaint you wish to make.

Who can I contact if I have any questions about this study?

Egor Vert

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