

Research Ethics Essay Assignment

For 5e2 (MSC) + 4th year intern students + visiting students only

Assignment Brief

This assignment is designed to allow you to demonstrate your understanding of the area of research ethics both at a practical level and in terms of broader considerations.

You are provided with two research project scenarios (see below) **of which you choose only one**. Based on your chosen research project scenario, you are asked to (1) complete an ethics approval application and (2) write a short essay outlining the broader ethical considerations.

Ethics Approval Application:

For this part of the assignment you have to complete the ethics documents for your chosen research study below. These comprise;

1. The Ethics Application Form
2. A Participant Information Sheet
3. A Consent Form

Samples of these different forms can be found in the accompanying ZIP file and more details can be found on the Engineering website below.

<https://www.tcd.ie/Engineering/research/researchethics.php>

Please note that the full Research Ethics Application form, should be completed for this assignment, however, as this is hypothetical research project, this does not need to be actually submitted to the Research Ethics Committee, just completed and returned as part of this assignment.

Short Essay

In addition to the ethics application for the specific research project, you are also required to write a short essay (c. 500 words) outlining the broader ethical considerations of the particular study. The essay should include what the key ethical areas of concern are and how you would mitigate them. In addition, the essay should discuss the broader societal implications in terms of ethics, for this particular product.

Both elements are required for the successful submission of the assignment.

Marking Scheme

The assignment is marked out of 100. The marks are distributed evenly between the two components:

Ethics Approval Application	50%
Short Essay	50%

Submission Details

The assignment documents (4) should be submitted through the module Blackboard site under Assignments. The deadline for the full set of documents is **Wednesday January 3rd 2024, by 23:59.**

Research Scenario No. 1 - HeyDude

You have been tasked to work on a research project, funded by a commercial company called HeyDude that has developed a hands-free speaker you control with your voice called TheBox. TheBox connects to the HeyDude Voice Service to play music, provide information, news, sports scores, weather, and more— instantly. All you have to do is ask. TheBox has seven microphones and beam forming technology so it can hear you from across the room—even while music is playing. TheBox is also an expertly tuned speaker that can fill any room with 360° immersive sound. When you want to use TheBox, just say the wake word "HeyDude" and TheBox responds instantly. HeyDude —the brain behind TheBox —is built in the cloud, so it is always getting smarter. The more you use TheBox, the more it adapts to your speech patterns, vocabulary, and personal preferences. And because TheBox is always connected, updates are delivered automatically.

The Research Project you are tasked with involves the testing of the HeyDude algorithm with a variety of different voices, particularly those with specific regional accents. The project involves running of experiments in which audio recordings of test subject's speech, recruited internally within the university (i.e. students and staff), are recorded and used to test the accuracy of the machine learning algorithm on which the technology is based. Apart from the speech recordings, no other personal data is recorded (names, email addresses, etc.), however, general information such as age range, gender, and accent type is recorded.

Note – the similarity of this product to REAL products is intentional. You may read around the real-life product to see if they have implemented any features you think are useful. You may also add additional features you think mitigate some of your identified ethical issues more effectively.

Suggested reading: <https://technologyandsociety.org/tag/voice-recognition/>

Research Scenario No. 2 - Happy Caller ID

You have been tasked to work on a research project, funded by a commercial company that has developed an automated paralinguistic speech analysis algorithm. Automated paralinguistic speech analysis is a young field with a great potential for improving efficiency of several business fields, such as call centre quality control, targeted advertising, or emotion-sensitive virtual agents. Their products allow you to detect a multitude of attributes from the human voice, such as emotion and affective states, age, depression, alertness, or personality. Further, our technology is able to analyse vocal parameters which could indicate vocal pathological disorders or psychological disorders like depression.

The Research Project you are tasked with involves the testing of the Happy Caller ID algorithm with a variety of different voices, particularly those which display specific pathological disorders or psychological disorders like depression or anxiety. The project involves running of experiments in which audio recordings of test subject's speech are recorded and used to test the accuracy of the machine learning algorithm on which the technology is based. The test subjects will comprise of actors hired externally from the university and paid at standard commercial rates, who will then be asked to mimic these different emotional states. Apart from the speech recordings, no other personal data is recorded (names, email addresses, etc.), however, general information such as age range, gender, and mimicked emotional state recorded.

Note – the similarity of this product to REAL products is intentional. You may read around the real-life product to see if they have implemented any features you think are useful. You may also add additional features you think mitigate some of your identified ethical issues more effectively.

Suggested reading: <https://technologyandsociety.org/tag/voice-recognition/>