Fast-Track Ethical Approval Form

This fast-track form is for **taught students** only. The form needs to be filled by the student and their advisor (or module leader if the project is a module assignment).

Research students and staff must complete the Full Ethical Approval Form.

**Students:** You need to discuss the ethical considerations of your project with your project advisor (or module leader if the project is a module assignment) and, if necessary, fill in a full ethics form to be submitted to the Physical Sciences Ethics Committee.

**Advisors (or Module Leaders):** You need to review and approve the completed form. Please ensure you are familiar with the University’s ‘Code of practice and principles for good ethical governance’ to guide your student effectively. Please seek guidance from the Departmental Ethics Officer(s) if you are uncertain about any ethical issue arising from this application.

# Potential Ethical Issues

Does your project involve any of the following? Please mark Yes or No for **all** issues.

|  |  |  |
| --- | --- | --- |
| Yes | No |  |
| |  | | --- | |  | | |  | | --- | | X | | Human participants (adults or children) |
| |  | | --- | |  | | |  | | --- | | X | | Human material (e.g. tissue or fluid samples) |
| |  | | --- | | X | | |  | | --- | |  | | Human data (e.g. surveys and questionnaires on issues such as lifestyle, housing and working environments, attitudes and preferences) |
| |  | | --- | |  | | |  | | --- | | X | | Vertebrates, especially mammals and birds |
| |  | | --- | |  | | |  | | --- | | X | | Any other organisms not previously mentioned |
| |  | | --- | |  | | |  | | --- | | X | | Military or defence context |
| |  | | --- | |  | | |  | | --- | | X | | Funding sources or collaboration with potential to adversely affect existing relationships or bring the University or Department into disrepute (e.g. projects related to gambling, dark market, etc.) |
| |  | | --- | |  | | |  | | --- | | X | | Restrictions on dissemination |
| |  | | --- | |  | | |  | | --- | | X | | Overseas countries under regimes with poor human rights record or identified as dangerous by the Foreign & Commonwealth Office |
| |  | | --- | |  | | |  | | --- | | X | | Applications that could potentially involve unethical practice, including potential dual-use applications which could be unethical (e.g. projects involving tools or data that can be used to attack systems) |

If you answered **No** to all the above, you do not need an ethical approval.

If you answered **Yes** to any of the above, you must complete this Fast-Track Ethical Approval Form, get it signed off by your project advisor (or module leader), and submit it for approval to the Departmental Ethics Officer(s).

This form is designed to verify specific conditions. If certain conditions are not satisfied, the form will guide you to complete a full Ethical Approval Application, to be approved by the Physical Science Ethics Committee.

# Project Information

|  |  |  |
| --- | --- | --- |
| Student Name: | |  | | --- | | Rosanna Higgins | |
| Course Title: | |  | | --- | | Msc Computer Science with Data Analytics | |
| Project Advisor: | |  | | --- | | Saul Cross | |
| Project Title: | |  | | --- | | A computer vision system for non-verbal communication in 3D virtual worlds | |

Project Type – Please mark one box:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| |  | | --- | |  | | Undergraduate Project | |  | | --- | | X | | Postgraduate Project |
| |  | | --- | |  | | Undergraduate Module Assignment | |  | | --- | |  | | Postgraduate Module Assignment |
| |  | | --- | |  | | |  |  | | --- | --- | | Other – Please specify: |  | | | |

# Informed Consent

If you do not have participants in your study, please mark the following and skip to Section 4.

|  |  |  |
| --- | --- | --- |
| |  | | --- | | X | | There are no participants in my study. |

If you have participants in your study, complete the following table.

If you answer **No** to any of the following, you must submit a Full Ethical Approval Form.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Yes | No | N/A |
| 1 | Will you inform the participants of the purpose of the study, the investigators, and any funding source? | |  | | --- | |  | | |  | | --- | |  | | |  | | --- | |  | |
| 2 | Will you describe the procedures and the data collected to participants in advance, so that they are informed about what to expect? | |  | | --- | |  | | |  | | --- | |  | | |  | | --- | |  | |
|  | Note: any personal or sensitive information, and any audio or video recording must be explained explicitly and in detail. |  |  |  |
| 3 | Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs? | |  | | --- | |  | | |  | | --- | |  | | |  | | --- | |  | |
|  | Note: If there is a plan to publish data, e.g. direct quotations, on an individual basis (rather than in aggregate), the exact anonymisation method needs to be explained clearly. |  |  |  |
| 4 | Will you inform participants of any possible risks of participation? | |  | | --- | |  | | |  | | --- | |  | | |  | | --- | |  | |
| 5 | Will you inform participants that their participation is voluntary, that they may withdraw from the research at any time (even after the data collection, for as long as possible) and for any reason without any negative consequences, and how they can request withdrawal? | |  | | --- | |  | | |  | | --- | |  | | |  | | --- | |  | |
| 6 | Will you obtain and record explicit consent for participation? | |  | | --- | |  | | |  | | --- | |  | | |  | | --- | |  | |
| 7 | If the research is observational, will you obtain and record explicit consent to being observed? | |  | | --- | |  | | |  | | --- | |  | | |  | | --- | |  | |
| 8 | If the research involves audio or video recording, will you obtain and record explicit consent to being recorded? | |  | | --- | |  | | |  | | --- | |  | | |  | | --- | |  | |
| 9 | If there is a plan to publish data, e.g. direct quotations, on an individual basis, will you obtain and record explicit consent to such publication? | |  | | --- | |  | | |  | | --- | |  | | |  | | --- | |  | |
| 10 | If you wish to contact participants in the future, will you obtain and record explicit consent to being contacted with contact method specified? | |  | | --- | |  | | |  | | --- | |  | | |  | | --- | |  | |

If you answered Yes to any of the above, this must be **explicit** in your supporting documents, e.g. consent forms, information sheets, and questionnaires. You need to submit these supporting documents along with this form.

# Protocol Issues

If you answer **Yes** to any of the following, you must submit a Full Ethical Approval Form.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Yes | No | N/A |
| 1 | Is your study designed to be challenging or disturbing (physically or psychologically) for anyone including yourself? | |  | | --- | |  | | |  | | --- | | x | | |  | | --- | |  | |
| 2 | Will you deliberately mislead your participants? | |  | | --- | |  | | |  | | --- | | x | | |  | | --- | |  | |
| 3 | Does your study involve taking bodily samples? | |  | | --- | |  | | |  | | --- | | x | | |  | | --- | |  | |
| 4 | Is your study physically invasive? | |  | | --- | |  | | |  | | --- | | x | | |  | | --- | |  | |
| 5 | Is there any obvious or inevitable adaptation of your research findings to ethically questionable aims? | |  | | --- | |  | | |  | | --- | | x | | |  | | --- | |  | |
| 6 | Could the methodologies or findings of your study damage the reputation of the University of York? | |  | | --- | |  | | |  | | --- | | x | | |  | | --- | |  | |

# Health and Safety

Please identify any risks to the participants and state any precautions you will take to ensure their health and safety. If you believe there are no risks, please state why.

|  |
| --- |
| There are no participants involved. There might be a requirement to collect video footage of people performing gestures to generate data but this would only require people to perform simple hand gestures in front of a webcam and it is unlikely they could come to any harm. |

# Animals and Vulnerable Groups

If you answer **Yes** to any of the following, you must submit a Full Ethical Approval Form.

If your participants are **patients**, in addition to the Full Ethical Application you must follow the Guidelines for Ethical Approval of NHS Projects.

If your project involves any vulnerable group, you may also need to obtain satisfactory Disclosure and Barring Service (DBS) clearance (or equivalent for overseas students).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Yes | No | N/A |
| 1 | Does your project involve working with animals | |  | | --- | |  | | |  | | --- | | x | | |  | | --- | |  | |
| 2 | Does your project involve any of the following vulnerable groups? |  |  |  |
|  | * Children under 18 | |  | | --- | |  | | |  | | --- | | X | | |  | | --- | |  | |
|  | * People with learning difficulties | |  | | --- | |  | | |  | | --- | | X | | |  | | --- | |  | |
|  | * People who are unconscious or severely ill | |  | | --- | |  | | |  | | --- | | X | | |  | | --- | |  | |
|  | * Patients, e.g. NHS patients | |  | | --- | |  | | |  | | --- | | X | | |  | | --- | |  | |
|  | * Other vulnerable groups – specify below | |  | | --- | |  | | |  | | --- | | X | | |  | | --- | |  | |
|  | |  | | --- | |  | |  |  |  |

# Data Protection

If you answer **No** to any of the following, you must submit a Full Ethical Approval Form.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Yes | No | N/A |
| 1 | Any personal or sensitive data will be stored in password protected folders on computers controlled by the University or an approved partner. | |  | | --- | | x | | |  | | --- | |  | | |  | | --- | |  | |
| 2 | Any hard copies of personal data (including any hard-copy consent forms) will be stored in a secure place within University premises, or those of an approved partner. | |  | | --- | | x | | |  | | --- | |  | | |  | | --- | |  | |
| 3 | Only the student and advisor will have access to the data generated from the study.  Note: The advisor may share the anonymised data with other researchers at the University of York, but the consent form needs to make this clear. | |  | | --- | | x | | |  | | --- | |  | | |  | | --- | |  | |
| 4 | The data will be preserved beyond the study in line with University policy and will be placed in the custody of the advisor at the end of the project, or destroyed in accordance with information provided to participants. | |  | | --- | | x | | |  | | --- | |  | | |  | | --- | |  | |
| 5 | All data will be anonymised prior to analysis. | |  | | --- | | x | | |  | | --- | |  | | |  | | --- | |  | |
|  | Please state your method of anonymisation:   |  | | --- | | Keypoint data for training a model will be extracted from video and saved to an input data folder with a suitable naming convention that does not contain any identifiers e.g. “wave\_0000.csv”. Key point data is a series of coordinates for joints and will not contain any personal information. | |  |  |  |

# Project Description

Provide a clear statement of your research question(s) or your experimental hypothesis(es).

|  |
| --- |
| The aim of this project is to design and build an end-to-end module with the ability to detect and classify a set of gesture based non-verbal cues in real time from RGB camera input. The result would be a system which can classify three different gestures that are significant to non-verbal communication and technically feasible (significant gestures would be chosen after a literature review). Research questions to be answered are the following:   * Identify what accuracy is required to make the system usable within the application and whether this accuracy can be achieved for classifying non-verbal cues with this system? * Which type of model yields better results in terms of accuracy, performance and storage requirements? Heuristic or Machine learning models? * What are the limitations of running this module in real time on the client’s browser on a standard desktop or laptop computer? |

Briefly explain what you are going to do in your study. Give sufficient detail that a non-expert in the subject can understand what you are proposing to do.

|  |
| --- |
| Two software components will be developed: a pose tracker and a gesture classifier.  Pose tracker: this component will take input from an RGB camera (e.g. a webcam) and output a series of skeletal keypoints mapping to a human pose. To implement this I will need to use an existing open-source model for pose tracking such as openpose, posenet or alphapose. Part of the project will be evaluating which model is most suitable to the task, especially under the performance constraints of running the module in a client's browser.  Gesture classification: this component will take the output of the pose tracker (a series of 3D/2D keypoints over time) and classify whether or not it is a type of gesture. For this there are two approaches to compare in terms of accuracy and performance: machine learning (ML) and heuristics based techniques. The ML approach requires training a model on pose data using a supervised classification technique and the heuristics based approach may involve devising a model based on observation, such as thresholding based on angle and time. |

If you have participants in your project, briefly specify each of the following:

1. Who are your target participants and how are you recruiting them?

|  |
| --- |
| There are no participants. Human data might be collected, if that is required I would only need a few people to take part : potentially friends, family or neighbours. I would get informed consent from anyone who took part. |

1. Exactly what pieces of personal and demographic information you are collecting? Explain why you **need** each.

|  |
| --- |
| Video footage is needed of hand gestures in order to extract keypoint data. |

1. How are you planning to publish your data and analysis results: on an aggregate basis or on an individual basis? If on an individual basis, explain why you **need** to do so and if they will be anonymised.

|  |
| --- |
| Aggregate basis |

1. Is there a risk that the data or analysis results you publish can be de-anonymised? If yes, explain how you are planning to mitigate it.

|  |
| --- |
| There should not be a risk, there should not be any known biometrics within the keypoint data (legs will not be visible so no gait) |

1. If you have questionnaires or interviews, will you give participants the option of skipping any questions they do not want to answer? If any of your questions is/are mandatory, explain why it/they **must** be.

|  |
| --- |
| N/A |

# Student Declaration

Please mark the boxes below and sign.

|  |  |  |
| --- | --- | --- |
| |  | | --- | | x | | I have considered the ethical implications of this project and have identified no significant ethical implications requiring a full ethics application submission to the Physical Sciences Ethics Committee. |
| |  | | --- | |  | | I have included all supporting documents (e.g. consent form, information sheet, questionnaires, interview schedules) with this application. |
| |  | | --- | |  | | All the components specified in Section 3 are included explicitly in the information sheet / consent form submitted with this application (if applicable). |

|  |  |  |
| --- | --- | --- |
| Student Name: | |  | | --- | | Rosanna Higgins | |
| Student Signature: | |  | | --- | | Rosanna Higgins | |
| Date: | |  | | --- | | 28/02/2022 | |

# Advisor (or Module leader) Approval

If this project is related to any previously approved work, please include the reference number(s) for that work here.

|  |
| --- |
|  |

Please mark the boxes below and sign.

|  |  |  |
| --- | --- | --- |
| |  | | --- | | x | | The student has taken all reasonable steps to ensure ethical practice in this study and I can identify no significant ethical implications requiring a full ethics application submission to the Physical Sciences Ethics Committee. |
| |  | | --- | | x | | I have checked and approved all supporting documents required for this application. |
| |  | | --- | | x | | I understand that completion of this form indicates that from the ethical point of view I am willing to share responsibility for the work being conducted. |

|  |  |  |
| --- | --- | --- |
| Advisor Name: | |  | | --- | | Saul Cross | |
| Advisor Signature: | |  | | --- | | Saul Cross | |
| Date: | |  | | --- | | 15/03/22 | |

# Submission

Instructions for student: Please make sure this form is completed in full and signed by you. Submit to the Projects Coordinator (RP) or your Project Supervisor (IRP). Be prepared to discuss the your project and this form in full with your Project Supervisor.

Instructions for Project Supervisors: Please make sure this form is completed in full, signed by both the student and the Project Supervisor. Forms must be accompanied by required supporting documents (e.g. participant information sheet and consent forms). Once completed, sign the form and submit this form and all **supporting documents**, preferably all in **pdf** unless other file types are appropriate, by email to the Departmental Ethics Officer(s) at [cs-ethics@york.ac.uk](mailto:cs-ethics@york.ac.uk).