Sheffield Hallam University

RESEARCH ETHICS CHECKLIST FOR STUDENTS (SHUREC7)

This form is designed to help students and their supervisors to complete an ethical scrutiny of proposed research. The SHU Research Ethics Policy should be consulted before completing the form.

Answering the questions below will help you decide whether your proposed research requires ethical review by a Designated Research Ethics Working Group.

The final responsibility for ensuring that ethical research practices are followed rests with the supervisor for student research.

Note that students and staff are responsible for making suitable arrangements for keeping data secure and, if relevant, for keeping the identity of participants anonymous. They are also responsible for following SHU guidelines about data encryption and research data management.

The form also enables the University and Faculty to keep a record confirming that research conducted has been subjected to ethical scrutiny.

For student projects, the form may be completed by the student and the supervisor and/or module leader (as applicable). In all cases, it should be counter-signed by the supervisor and/or module leader and kept as a record showing that ethical scrutiny has occurred. Students should retain a copy for inclusion in their research projects, and staff should keep a copy in the student file.

Please note if it may be necessary to conduct a health and safety risk assessment for the proposed research. Further information can be obtained from the Faculty Safety Co-ordinator.

General Details

Name of student	Ashley Smith
SHU email address	b5010988@my.shu.ac.uk
Course or qualification (student)	Computer Science for Games
Name of supervisor	Dr. Jacob Habgood
email address	j.habgood@shu.ac.uk
Title of proposed research	The path to the right decision: An investigation into using heuristic pathfinding algorithms for decision making.
Proposed start date	September 2019
Proposed end date	January 2020
Brief outline of research to include, rationale & aims (250-500 words).	Pathfinding in video games always takes a backseat in the decision-making process. In some games, the real distance or path to a location isn't factored correctly and can result in incorrect AI. Once the decision has been made, the AI commits to finding a path without being able to change its mind.

	In strategic games, an agent could decide to attack a certain target, and so it needs to navigate to a location in range. However, along this route, obstacles or other enemies may worsen this decision when it's too late to switch targets. Alternatively, a player that needs the use of a pathfinding algorithm to navigate over a hazardous area may be surprised when the algorithm didn't take the player's character into account; the character could run out of health or some form of protective buff and so could perish in a situation where the AI could have pathed around the hazard in a slower but safer way. While it is perfectly valid to use search algorithms like A* for pathfinding, this paper investigates how viable they are for alternative uses. By substituting the types used in A* as well as supplying suitable heuristic methods, a search algorithm will traverse graphs containing data that is not necessarily spatial. Just like how a GPS can consider a busy road to be slower than a longer road with a low speed limit, an implementation of A* could be made to make different decisions based on a variety of metrics other than distance. This project aims to investigate the effects of using different heuristic and weighing functions with a re-implementation of A* in a strategic game setting. This project also aims to investigate how flexible this method of creating game AI could be, by exposing adjustable variables for changing an AI's decision-making process.
Where data is collected from individuals, outline the nature of data, details of anonymisation, storage and disposal procedures if required (250-500 words).	Data collected as part of this research will be obtained by profiling an offline AI that simply implements the A* algorithm and uses no datasets or anything else that could contain the data of an individual. The AI will be simulated in a local environment and analysed by myself. I will place teams of AI into different situations and record how it plays step-by-step to see how different parameters and/or functions effect the outcomes of its decisions. I will be taking note of the actions made and the placement of the agent's units. I will also be taking note of the sizes and tiles on the maps I create so that I can draw conclusions on what situations could be considered suitable – if the majority of situations are considered unsuitable this would show this method of implementing AI to be unstable. There will be no data collected from (or about) human participants for this research since the hypothesis does not concern the decisions or opinions of human beings.

1. Health Related Research Involving the NHS or Social Care / Community Care or the Criminal Justice Service or with research participants unable to provide informed consent

Question	Yes/No
1. Does the research involve? • Patients recruited because of their past or present use of the NHS or Social Care • Relatives/carers of patients recruited because of their past or present use of the NHS or Social Care • Access to data, organs or other bodily material of past or present NHS patients • Foetal material and IVF involving NHS patients • The recently dead in NHS premises • Prisoners or others within the criminal justice system recruited for health-related research***** • Police, court officials, prisoners or others within the criminal justice system***** • Participants who are unable to provide informed consent due to their incapacity even if the project is not health related	No
2. Is this a research project as opposed to service evaluation or audit? *For NHS definitions please see the following website* http://www.hra.nhs.uk/documents/2013/09/defining-research.pdf	No

If you have answered **YES** to questions **1 & 2** then you **must** seek the appropriate external approvals from the NHS, Social Care or the National Offender Management Service (NOMS) under their independent Research Governance schemes. Further information is provided below.

NHS https://www.myresearchproject.org.uk/Signin.aspx

***** All prison and probation projects also need HM Prison and Probation Service (HMPPS) approval. Further guidance at: https://www.myresearchproject.org.uk/help/hlphmpps.aspx

NB FRECs provide Independent Scientific Review for NHS or SC research and initial scrutiny for ethics applications as required for university sponsorship of the research. Applicants can use the NHS proforma and submit this initially to their FREC.

2. Research with Human Participants

Question	Yes/No
Does the research involve human participants? This includes surveys, questionnaires, observing behaviour etc.	No
Question	**Yes/No**
1. *Note If YES, then please answer questions 2 to 10* *If NO, please go to Section 3*	
2. Will any of the participants be vulnerable? *Note: Vulnerable' people include children and young people, people with learning disabilities, people who may be limited by age or sickness, etc. See definition on website*	
3. Are drugs, placebos or other substances (e.g. food substances, vitamins) to be administered to the study participants or will the study involve invasive, intrusive or potentially harmful procedures of any kind?	
4. Will tissue samples (including blood) be obtained from participants?	

5. Is pain or more than mild discomfort likely to result from the study?	
6. Will the study involve prolonged or repetitive testing?	
7. Is there any reasonable and foreseeable risk of physical or emotional harm to any of the participants? *Note: Harm may be caused by distressing or intrusive interview questions, uncomfortable procedures involving the participant, invasion of privacy, topics relating to highly personal information, topics relating to illegal activity, etc.*	
8. Will anyone be taking part without giving their informed consent?	
9. Is it covert research? *Note: 'Covert research' refers to research that is conducted without the knowledge of participants.*	
10. Will the research output allow identification of any individual who has not given their express consent to be identified?	

If you answered **YES only** to question **1,** the checklist should be saved and any course procedures for submission followed. If you have answered **YES** to any of the other questions you are **required** to submit a SHUREC8A (or 8B) to the FREC. If you answered **YES** to question **8** and participants cannot provide informed consent due to their incapacity you must obtain the appropriate approvals from the NHS research governance system. Your supervisor will advise.

3. Research in Organisations

Question	**Yes/No**
1. Will the research involve working with/within an organisation (e.g. school, business, charity, museum, government department, international agency, etc.)?	No
2. If you answered YES to question 1, do you have granted access to conduct the research? *If YES, students please show evidence to your supervisor. PI should retain safely.*	
3. If you answered NO to question 2, is it because: A. you have not yet asked B. you have asked and not yet received an answer C. you have asked and been refused access. *Note: You will only be able to start the research when you have been granted access.*	

4. Research with Products and Artefacts

Question	**Yes/No**
1. Will the research involve working with copyrighted documents, films, broadcasts, photographs, artworks, designs, products, programmes, databases, networks, processes, existing datasets or secure data?	No

2. If you answered YES to question 1, are the materials you intend to use in the public domain? *Notes: 'In the public domain' does not mean the same thing as 'publicly accessible'.* • *Information which is 'in the public domain' is no longer protected by copyright (i.e. copyright has either expired or been waived) and can be used without permission.* • *Information which is 'publicly accessible' (e.g. TV broadcasts, websites, artworks, newspapers) is available for anyone to consult/view. It is still protected by copyright even if there is no copyright notice. In UK law, copyright protection is automatic and does not require a copyright statement, although it is always good practice to provide one. It is necessary to check the terms and conditions of use to find out exactly how the material may be reused etc.* *If you answered YES to question 1, be aware that you may need to consider other ethics codes. For example, when conducting Internet research, consult the code of the Association of Internet Researchers; for educational research, consult the Code of Ethics of the British Educational Research Association.*	
3. If you answered NO to question 2, do you have explicit permission to use these materials as data? *If YES, please show evidence to your supervisor.*	
4. If you answered NO to question 3, is it because: A. you have not yet asked permission B. you have asked and not yet received and answer C. you have asked and been refused access. *Note You will only be able to start the research when you have been granted permission to use the specified material.*	**A/B/C**

Adherence to SHU policy and procedures

Personal statement	
I can confirm that: – I have read the Sheffield Hallam University Research Ethics Policy and Procedures – I agree to abide by its principles.	
Student	
Name: Ashley Smith	Date: 26/11/2019
Signature: 	
Supervisor or other person giving ethical sign-off	
I can confirm that completion of this form has not identified the need for ethical approval by the FREC or an NHS, Social Care or other external REC. The research will not commence until any approvals required under Sections 3 & 4 have been received.	
Name: Jake Habgood	Date: 26/11/2019
Signature: 	

Additional Signature if required:	
Name:	Date:
Signature:	

Please ensure the following are included with this form if applicable, tick box to indicate:

	Yes	No	N/A
Research proposal if prepared previously	☐	☐	☐
Any recruitment materials (e.g. posters, letters, etc.)	☐	☐	☐
Participant information sheet	☐	☐	☐
Participant consent form	☐	☐	☐
Details of measures to be used (e.g. questionnaires, etc.)	☐	☐	☐
Outline interview schedule / focus group schedule	☐	☐	☐
Debriefing materials	☐	☐	☐
Health and Safety Project Safety Plan for Procedures	☐	☐	☐