



Human Ethics Application

Application ID :	0000028506
Application Title :	Why Do Programmers Do What They Do?
Date of Submission :	15/05/2020
Primary Investigator :	Lavanya Sajwan; Principal Investigator
Other Personnel :	Prof James Noble; Supervisor Dr Craig Anslow; Associate Investigator

Research Form

Application Type

Is this application for:*

☒ Research ☐ Teaching only

Please select '**Research**' below and then select '**Save**' to access the rest of the form.

*

Research

Research Overview

Application Details

1. Application ID

0000028506

2. Title of project

(Click the ? icon for more info)*

Why Do Programmers Do What They Do?

3. School or research centre*

Engineering and Computer Science

4. The following questions will help the committee assess whether your application is categorised as a Category A (more than low risk) or Category B (low risk).

Please check all of the boxes that apply. You will be asked for more information about some of these questions later in the application.

Check the box if your study:

4a Is health research*

☐ Yes ☒ No

4b Is an intervention study*

☐ Yes ☒ No

4c Involves the use, collection or storage of human tissue*

☐ Yes ☒ No

4d Involves processes that use EEG, ECG, MRI, TMS, FMRI, EMG, radiation, invasive or surface recordings*

☐ Yes ☒ No

4e Involves collection of information about illegal behaviour, or information that has been obtained illegally*

☐ Yes ☒ No

4f Involves people who are not giving consent to be part of the study (other than observational research in a public place)*

☐ Yes ☒ No

4g Involves participants under the age of 16*

☐ Yes ☒ No

4g (i) Will a parent/guardian be asked to give consent for the child/young person to participate in research?*

☐ Yes ☐ No ☒ N/A

4g (ii) Will more than one meeting be held with the child/young people without others present? *

☐ Yes ☐ No ☒ N/A

4h Involves participants whose ability to consent freely is compromised due to context (e.g. people in prison), or a limited capability to make independent rational decisions (e.g. those with a serious intellectual disability).*

☐ Yes ☒ No

4i Involves the use of concealment or covert observations, including those conducted online or conducted in social media. *

☐ Yes ☒ No

4j Involves the use of previously collected personal information, other data, or biological samples for the collection of which there was no explicit consent for use in research. *

☐ Yes ☒ No

4k Involves deception of the participants, including concealment of the true purpose of the research *

☐ Yes ☒ No

4l Involves the use of highly sensitive information (see policy for definition) *

☐ Yes ☒ No

4m Involves a focus on, has particular importance for, or impacts on Māori *

☐ Yes ☒ No

4n Involves any other group (for example cultural or religious), other than Māori, and has the potential to cause discomfort or disruption to members of that group *

☐ Yes ☒ No

4o Involves any direct financial interest in the outcome of the research by any member of the research team or external sponsor *

☐ Yes ☒ No

4p Involve a conflict of interest or the appearance of a conflict of interest for the researcher (for example, where the researcher is also the lecturer/teacher/treatment provider/colleague/manager or employer of the participants) *

☐ Yes ☒ No

4q Involve any situation which may put the researcher at risk of harm (e.g. overseas in politically unstable countries) *

☐ Yes ☒ No

4r Involve a reasonable expectation that participants may experience (at a greater level than in everyday life) physical discomfort, emotional discomfort, or psychological or spiritual harm (e.g. asking participants to recall upsetting events) *

☐ Yes ☒ No

Relationship to other Projects

5. Does this application relate to any previous applications submitted to an ethics committee (at VUW or other Institute)? *

☒ Yes

☐ No

5a. If this was a Victoria University of Wellington human ethics applications, please search and add the related ethics applications from the below search window.

Search by title (partial or complete) or application ID (partial or complete):

This question is not answered.

5a (i). If you can't find the application above, please enter the application number here.

0000024839

5a (ii). If this was an ethics committee from another institution, please upload supporting documentation (such as a letter of approval) in the document section.

5a (iii). If your research has been assessed by a Health and Disability Ethics Committee (HDEC) and found to be Out of Scope, please upload a copy of the Scope of Review form submitted to HDEC and the Out of Scope letter on the Documents page.

Personnel

Personnel

To add other researchers, enter their user name, if known, or search for their first or last name (whichever is the most unusual). Click the search icon to run the search, and select the person from the list view. Click on **'OK'** at the bottom right corner to save the person record.

1	First Name	Lavanya
	Last Name	Sajwan
	Full Name	Lavanya Sajwan
	AOU system code	Engineering and Computer Science
	Position	Principal Investigator
	Primary Investigator?	Yes
2	First Name	Craig
	Last Name	Anslow
	Full Name	Dr Craig Anslow
	AOU system code	Engineering and Computer Science
	Position	Associate Investigator
	Primary Investigator?	No

6. Are any of the researchers from outside Victoria?*

- ☐ Yes
☒ No

7. Is the principal investigator a student?*

- ☒ Yes
☐ No

Student Researcher

7a. What is your course code (e.g. ANTH 690)?*

ENGR489

7b. Supervisor

To add your supervisor enter their user name, if known, or search for their first or last name (whichever is the most unusual). Click the search icon to run the search, and select the person from the list view. Click on '**OK**' at the bottom right corner to save the person record. *

1	Given Name	James
	Surname	Noble
	Full Name	Prof James Noble
	AOU	Engineering and Computer Science
	Position	Supervisor

7c. What is your email address? (this is needed in case the committee needs to contact you about this application)*

sajwanlava@myvu.ac.nz

Scope of Research

Project Details

8. Describe the aims and objectives of this project

Provide a brief summary in plain language of the purpose, research questions/hypothesis, and objectives of your project. *

This project will investigate how software programmers implement and adopt security practices in the work they do, in order to develop an understanding of the influences and impacts on decisions surrounding their technical work. Examples of influences can include: type of education, whether the organisation further educates the employees, and what programming languages have they had experiences with.

This project will be done by using grounded theory and interviews will take place to collect the data, to which then analysis of answers will then need to occur.

9. Describe the benefits and scholarly value of the project

Briefly place the project in perspective, explaining its significance and worthwhile outcomes. Include how this project will build on relevant literature, including references if appropriate.

*

Qualitative research is often neglected and overlooked in favour of more quantitative reasoning and technical traits; the processing speed, the programmers task-completion rate. Programmers provide a human aspect to a technical solution and therefore, there should be a shift to understanding the more background 'soft' processes that occur when making decisions; why are the choices made based on past influences, and how they affect the programmers work in the present?

Exploring this topic is essential as it allows for more understanding on how and why programmers think the way they do, and it builds a more robust understanding of the human and social aspects of Software Engineering. The findings of this can be used to identify what security methods developers find as beneficial in their programming. This will allow programmers to complete their work to a higher standard, thus overall making their work of a higher value.

10. Explain any ethical issues your research raises for participants, yourself as the researcher, or wider communities and institutions, and how you will address these. This is an opportunity to present what you think the key risks are in your project and show how you have taken them into account.*

The project aims to investigate how security practices are implemented and adopted in the work programmers in industry work on. Steps will need to be taken to ensure that the interview questions will be written in a way that does not reveal the individuals personal passwords or suggest any hints to it. As they will be professionals, the questions will also have to be worded in a way that does not expose specific business secrets. By doing both of these, the privacy of the person and the company can be maintained and protected. Participants will not require approval from organisations to partake in this study, as the participants will not be named in any produced texts, and therefore, will not be linked to any specific organisation. It will be explained to participants that they should not reveal any business secrets or passwords at the start of the interview, and this piece of information will also be stated in the supporting participant information sheet document.

There is also a risk of discovering an organisation's security practices, which means the interview data needs to be kept secure and confidential. For instance, any reports or publications should avoid including compromising information and allow interviewees to see their transcripts to comment and edit any information.

Key Dates

If approved, this application will cover this research project from the date of approval for up to 3 years.

11. Proposed start date for data collection*

06/07/2020

12. Proposed end date for data collection*

28/02/2021

13. Proposed end date for research project*

28/02/2021

Proposed source of funding and other ethical considerations

14. Indicate any sources of funding

- Internally: by a University grant, such as the University Research Fund
- Externally: funding from an external organisation for this project, or a scholarship awarded by an external organisation
- Self-funded: paying for research costs such as travel, postage etc. from your own funds

Tick all that apply:

- ☒ Internally funded
☐ Externally funded
☒ Self-funded

15. Is any professional code of ethics to be followed?*

- ☐ Yes
☒ No

16. Do you require ethical approval from any other organisation, such as another tertiary institution in New Zealand or overseas, or a District Health Board?*

- ☐ Yes
☒ No

Data Collection and Recruitment

Data Collection

17. Please select all forms of data collection you will use in your project*

- ☒ Interviews
- ☐ Focus groups
- ☐ Questionnaires
- ☐ Observation
- ☐ Other

18. Provide an explanation of the sampling rationale for your study.

E.g. representative sampling of a particular population, purposive sampling, convenience sampling. Include here your eligibility criteria for potential participants -- will there be particular criteria for participants to be included in your study, or criteria that will exclude them? *

The study will follow purposeful sampling as the participants will be those working in the industry and ideally have a range of job titles associated with programming and years in the field in order to find interesting comparisons during the interview process in the way security practices are adopted in the developed software. They can be a part of any type of organisation; government, private, non-profit etc.

Examples of appropriate jobs associated with the individuals can be; devops engineers, front-end security developers, database administrators, security architects etc.

Participants will consequently be filtered by appropriate job titles and anyone younger than the age of 18.

19. How many participants will be involved in your research?

Please specify how many groups and how many participants in each group. *

Up to 30 participants from the industry who are familiar with security practices through the professional work they do.

20. What are the characteristics of the people you will be recruiting?*

The key characteristic of the individuals will be their programming experience, security education, and age. They will have a technical role within the organisation. The study hopes to capture a range of ages and levels experience in their role in order for in-depth comparisons for analysis. Therefore, there is no specific minimum or limit on the years of programming experience, or what kind of experience, and security education sought. However, participants do have to be at least 18 years old. Participants jobs will all be New Zealand based. Participants can also work across a range programming fields eg. gaming, education, financial, analysis.

21. Outline in detail the method(s) of recruitment you will use for participants in your study. Include here how potential participants will be identified, who will contact them and how. Please include copies of all advertisements, online posts or recruitment emails in the 'Documents' section. *

I will make contact with sample groups with a request of participation by posting on groups, mailing lists and by using supervisor and my own connections. Such groups could be security groups on the websites, Meetup and LinkedIn. Mailing lists can consequently be obtained from those groups as well.

A pilot study will be conducted with 2-3 participants. These participants will be recruited directly by me and are all personal contacts; friends, and family friends.

22. Explain the details of the method of data collection. For example, describe the location of your research procedures, if appropriate (e.g. where your interviews will take place). If necessary, upload a research protocol in the 'Documents' section. *

The interviews will be confidential rather than anonymous as they are done in-person and to also allow for follow up questions if necessary. Participants will be welcome to leave at any time during the interview, do not have to answer any questions they do not want to and can choose to leave the study within a week after the interview if they would like.

Interviews should be done in safe and private environments, with all participants clear on earthquake and fire evacuation procedures relevant to their location. Due to the recent COVID-19 outbreak, I will offer zoom interviews for those who are unable or unwilling to meet directly. Consent can be obtained over email by sending the information sheet and consent form content to the participant in an email body and they reply to that email with "I consent".

For in-person interviews, I will provide a box of tissues, a bottle of sanitiser, and maintain social distancing. The small meeting room will be wiped down and disinfected between interviews.

The interviews will be voice recorded, and will then be transcribed.

23. Will your research project take place overseas?*

- ☐ Yes
- ☒ No

24. Does the research involve any other situation which may put the researcher at risk of harm (e.g. gathering data in private homes)?*

- ☐ Yes
- ☒ No

Participants and Informed Consent

25. Does your research target members of a vulnerable population?

This includes, but is not limited to, children under the age of 16, people with significant mental illness, people with serious intellectual disability, prisoners, employees and students of a researcher, and people whose health, employment, citizenship or housing status is compromised. Vulnerability is a broad category and encompasses people who may lack the ability to consent freely or may be particularly susceptible to harm. *

- ☐ Yes
- ☒ No

26. Have you undertaken any consultation with the groups from which you will be recruiting, regarding your method of recruitment, data collection, or your project more widely?*

- ☐ Yes
☒ No

27. Will your participants receive any gifts/koha in return for participating?*

- ☒ Yes
☐ No

27a. Describe the gifts/koha and the rationale.*

All individuals who participated in the interviews will be given a \$10 supermarket voucher, and all will go into the draw to win a \$60 supermarket voucher to thank them for their time and provide them with an incentive.

28. Will your participants receive any compensation for participation (for instance, meals, transport, or reimbursement of expenses)?*

- ☐ Yes
☒ No

29. How will informed consent be obtained? (tick all that apply to the research you are describing in this application)*

- ☐ Informed consent will be implied through voluntary participation (anonymous research only)
☐ Informed consent will be obtained through a signed consent form
☒ Informed consent will be obtained by some other method

29a. Describe the other method*

Participants can consent over email by simply sending the consent form content to the participant in an email body and they reply to that email with "I consent".

Treaty of Waitangi

Treaty of Waitangi

30. How does your research conform to the University's Treaty of Waitangi Statute? (you can access the statute from Victoria's [Treaty of Waitangi page](#))*

The study does not involve knowledge directly related to Te Āo Māori but care should be taken to encourage the participation of Māori under the principle of Whai wāhi (participation). To encourage this, the study will be advertised to organisations where there is more emphasis on using Te Tiriti o Waitangi as part of their core values.

Project Risks

Minimisation of Harm

31. Is it possible that participants may experience any physical discomfort as a result of the research?*

- ☐ Yes
☒ No

32. Is it possible that participants may experience any emotional or psychological discomfort as a result of the research? (E.g. asking participants to recall upsetting events, viewing disturbing imagery.)*

- ☐ Yes
☒ No

33. Will your participants experience any deception as a result of the research?*

- ☐ Yes
☒ No

34. Is any third party likely to experience any special hazard/risk including breach of privacy or release of commercially sensitive information? This may occur in the instance participants are asked to discuss identifiable third parties in the research.*

- ☒ Yes
☐ No

34a. Give details and indicate how you will manage this*

As this study involves questioning individuals on the security practices they implement in the software they develop there is a risk of exposing the company they work for. However, as outlined in question 10 of this application, there will be steps to prevent this happening by being careful of how questions are phrased. These include not publishing the interviewee and corresponding organisation name in any texts that are the result of this research.

35. Do you have any professional, personal, or financial relationship with prospective research participants? *

- ☐ Yes
☒ No

36. What opportunity will participants have to review the information they provide? (tick all that apply)*

- ☐ Will be given a full transcript of their interview and given an opportunity to provide comments
☐ Will be given a full transcript of their interview and NOT given an opportunity to provide comments
☐ Will be given a summary of their interview
☒ Other opportunity
☐ Will not have an opportunity to review the information they provide

36a. Please give details*

Participants can be given a recording of their interview and have the opportunity to add/edit/remove details up to 1 week after the interview has taken place.

Confidentiality and Anonymity

37. Will participation in the research be anonymous?

'Anonymous' means that the identity of the research participant is not known to anyone involved in the research, including researchers themselves. It is not possible for the researchers to identify whether the person took part in the research, or to subsequently identify people who took part (e.g., by recognising them in different settings by their appearance, or being able to identify them retrospectively by their appearance, or because of the distinctiveness of the information they were asked to provide).*

- ☐ Yes
☒ No

38. Will participation in the research be confidential?

'Confidential' means that those involved in the research are able to identify the participants but will not reveal their identity to anyone outside the research team. Researchers will also take reasonable precautions to ensure that participants' identities cannot be linked to their responses in the future.*

- ☒ Yes
☐ No

38a. How will confidentiality be maintained in terms of access to the identifiable research data? (tick all that apply)*

- ☐ Access to the research will be restricted to the investigator
☒ Access to the research will be restricted to the investigator and their supervisor
☐ Focus groups will have confidentiality ground rules
☐ Transcribers will sign confidentiality forms
☐ Other

38b. How will confidentiality be maintained in terms of reporting of the data? (tick all that apply)*

- ☒ Pseudonyms will be used
☒ Data will be aggregated
☒ Participants will be referred to by role rather than by name
☐ Other

38b (i). Please provide details*

Participants in the study will not be named in any reports or summaries produced. The study uses grounded theory methodology so the people and the answers will be grouped to form a final theory on what influences programmers to make the decisions they do. The purpose of the study is not to focus on the individuals, but rather draw conclusions and similarities from their responses. Instead, the study will likely compare different groups of people based on key variables such as computing experience. Participants will not be directly quoted, and will be referred to by role or pseudonyms.

39. Will participation in the research be neither confidential nor anonymous, and participants will be identifiable in any outputs or publications relating to the research? *

- ☐ Yes
☒ No

Data Management

Access, Storage, Use, and Disposal of Data

40. Which of the following best describes the form in which data generated in your study will be stored during the study?
See help text for guidance on these terms. Further info available on human ethics website.*

- ☐ Identifiable
- ☐ Potentially identifiable
- ☒ Partially de-identified
- ☐ De-identified
- ☐ Anonymous
- ☐ Other

41. Which of the following best describes the form in which data generated in your study will be stored after the study is completed?
See help text for guidance on these terms. Further info available on human ethics website.*

- ☐ Identifiable
- ☐ Potentially identifiable
- ☐ Partially de-identified
- ☒ De-identified
- ☐ Anonymous
- ☐ Other

42. Proposed date for destruction of identifiable research data (i.e. the date when data will be de-identified and personal information on participants destroyed)

*

31/12/2021

43. Proposed date for destruction of de-identified research data, including anonymous data

*

31/12/2021

44. Will any research data be kept for longer than 5 years after the conclusion of the research?*

- ☐ Yes
- ☒ No

45. Who will have access to identifiable, de-identified or anonymous data, both during and at the conclusion of the research?*

- ☐ Access restricted to the researcher only (whoever is named as PI)
- ☒ Access restricted to researcher and their supervisor
- ☐ Access restricted to researcher and immediate research team, e.g. co-investigators, assistants
- ☐ Other

46. Are there any plans to re-use either identifiable, de-identified or anonymous data?*

- ☐ Yes
- ☒ No

47. What procedures will be in place for the storage of, access to and disposal of data, both during and at the conclusion of the research? (Check all that apply)
Information regarding appropriate data storage is available on the human ethics website. Note that storing research data on USB drives is strongly discouraged for security reasons. *

- ☒ All hard copy material will be stored securely e.g. in a locked filing cabinet
- ☒ All electronic material will be held securely, e.g. only on University servers, password protected
- ☒ All hard copy material will be appropriately destroyed (e.g. shredded) on the dates given above
- ☒ All electronic data will be deleted on the dates given (ITS should be consulted on proper method)

Dissemination

Dissemination

48. How will you provide feedback to participants?*

I will offer participants the opportunity to request for a copy of their interview recording.

49. How will results be reported and published? Indicate which of the following are appropriate. The proposed form of publications should be indicated to participants on the information sheet and/or consent form*

- ☒ Publication in academic or professional journals
- ☒ Dissemination at academic or professional conferences
- ☒ Availability of the research paper or thesis in the University Library and Institutional Repository
- ☐ Other

50. Is it likely that this research will generate commercialisable intellectual property?
(Click the ? icon for more info)*

- ☐ Yes
- ☒ No

Supporting Documents

Documents

51. Please upload any documents relating to this application. Sample documents are available on the [Human Ethics web page](#).

- Ensure that your files are small enough to upload easily, and in formats which reviewers can easily download and review.
- To upload a document click on the green arrow to the right of the named document. Follow the on screen instructions which will be displayed to upload a document.
- To replace a document, click the tick in the column to the right of the document you want to replace, and follow the screen instructions to continue.
- To add a new document click on 'New Document', at top right of the documents table. You **must** enter the document name in the box that appears. Click on 'OK'. Click on the green arrow which appears to the right of the file name to continue.
- Collate all your documents into one PDF or Word file, and upload as a new document. This should be labelled as 'Combined Documents'.

*

Description	Reference	Soft copy	Hard copy
Participant information sheet(s)	Participant_Information_Sheet.pdf	✓	
Participant consent form(s)	Consent_to_Interview.pdf	✓	
Interview questions or guide	Interview_Guide.pdf	✓	
Application Changes	Changes_Summary.docx	✓	
Recruitment Posts	Recruitment_Post.pdf	✓	

Application Sign Off