Date: May 20, 2020 12:19:38 PM

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1.1 Study Identification

*All questions marked by a red asterisk * are required fields. However, because the mandatory fields have been kept to a minimum, answering only the required fields may not be sufficient for the REB to review your application.*

Please answer all relevant questions that will reasonably help to describe your study or proposed research.

1.0 * **Short Study Title** *(restricted to 250 characters)*:
Leveraging community-generated data to steer the evolution of computer games

2.0 * **Complete Study Title** *(can be exactly the same as short title)*:

Leveraging community-generated data to steer the evolution of computer games

3.0 * **Select the appropriate Research Ethics Board (***Detailed descriptions are available at* https://www.ualberta.ca/research/support/ethics-office/Human-Research-Ethics/Research-Ethics-Boards.aspx**):**
Research Ethics Board 2

4.0 * **Is the proposed research:**
Funded (Grant, subgrant, contract, internal funds, donation or some other source of funding)

5.01 * **Name of local Principal Investigator:**
Cor-Paul Bezemer

6.0 * **Type of research/study:**
Faculty/Academic Staff

7.0 **Investigator's Supervisor***(required for applications from undergraduate students, graduate students, post-doctoral fellows and medical residents to REBs 1 & 2. HREB does not accept applications from student PIs)*:

8.01 **Study Coordinators or Research Assistants:** People listed here can edit this application and will receive all email notifications for the study:

Name	Employer

There are no items to display

9.01 **Co-Investigators:** People listed here can edit this application and will receive email notifications *(Co-investigators who do not wish to receive email, should be added to the study team below instead of here).*
If your searched name does not come up when you type it in the box, the user does not have the Principal Investigator role in the online system. Click the following link for instructions on how to Request an Additional Role.

Name	Employer
There are no items to display	

10.01 **Study Team:** *(co-investigators, supervising team, and other study team members) - People listed here cannot view or edit this application and do not receive email notifications.*

Last Name	First Name	Organization	Role/Area of Responsibility	Phone	Email
Viggiato de Almeida	Markos		PhD Student		

1.3 Study Funding Information

1.0 * **Type of Funding:**
Grant (external)

2.0 * **Indicate which office administers your award.** *(It is the PI's responsibility to provide ethics approval notification to any office other than the ones listed below)*
University of Alberta - Research Services Office (RSO)

3.0 * **Funding Source**

3.1 Select all sources of funding from the list below:
NSERC - Natural Sciences And Engineering Research Council NSERC

3.2 If your source of funding is not available in the list above, click

"Add" below and write the Sponsor/Agency name(s) in the free text box that pops up. *(Nore: You may reflect multiple sources of funding by continuing to click "Add" to add each additional source of funding).*

There are no items to display

4.0 * **Indicate if this research sponsored or monitored by any of the following:**

Not applicable

The researcher is responsible for ensuring that the study complies with the applicable US regulations. The REB must also comply with US Regulations.

1.4 RSO Managed Funding

1.0 * **To connect your ethics application with your funding: provide all identifying information about the study funding – multiple rows allowed. For Project ID, enter a Funding ID provided by RSO/PeopleSoft Project ID** *(for example, RES0005638, G018903401, C19900137, etc).* **Enter the corresponding title for each Project ID.**

	Project ID	Project Title	Speed Code	Other Information
View	RES0043386	Leveraging community-generated data to steer the evolution of computer games		2019 NSERC Discovery Grant
View	RES0046071	Leveraging community-generated data to steer the evolution of computer games		2019 NSERC Discovery Launch Supplement

1.5 Conflict of Interest

1.0 * **Are any of the investigators or their immediate family receiving any personal remuneration (including investigator payments and recruitment incentives but excluding trainee remuneration or graduate student stipends) from the funding of this study that is not accounted for in the study budget?**

○ Yes ● **No**

2.0 * **Do any of investigators or their immediate family have any proprietary interests in the product under study or the outcome of the research including patents, trademarks, copyrights, and licensing agreements?**

○ Yes ● **No**

3.0 * **Is there any compensation for this study that is affected by the study outcome?**

○ Yes ● **No**

4.0 * **Do any of the investigators or their immediate family have equity interest in the sponsoring company? (This does not include Mutual Funds)**

○ Yes ● **No**

5.0 * **Do any of the investigators or their immediate family receive payments of other sorts, from this sponsor (i.e. grants, compensation in the form of equipment or supplies, retainers for ongoing consultation and honoraria)?**

○ Yes ● **No**

6.0 * **Are any of the investigators or their immediate family, members of the sponsor's Board of Directors, Scientific Advisory Panel or comparable body?**

○ Yes ● **No**

7.0 * **Do you have any other relationship, financial or non-financial, that, if not disclosed, could be construed as a conflict of interest?**

○ Yes ● **No**

Please explain if the answer to any of the above questions is Yes:

Important

If you answered YES to any of the questions above, you may be asked for more information.

1.6 Research Locations and Other Approvals

1.0 * **List the locations of the proposed research, including recruitment activities. Provide name of institution, facility or organization, town, or province as applicable**

All research activities will be done in Edmonton at the University of Alberta.

2.0 * **Indicate if the study will use or access facilities, programmes, resources, staff, students, specimens, patients or their records, at any of the sites affiliated with the following** *(select all that apply):*
Not applicable

List all health care research sites/locations:

3.0 **Multi-Institution Review**

* **3.1 Has this study already received approval from another REB?**
○ **Yes** ● **No**

4.0 **If this application is closely linked to research previously approved by one of the University of Alberta REBs or has already received ethics approval from an external ethics review board***(s)***, provide the study number, REB name or other identifying information. Attach any external REB application and approval letter in the Documentation Section – Other Documents.**

2.1 Study Objectives and Design

1.0 * **Provide a lay summary of your proposed research which would be understandable to general public**

To ensure that a game meets the high and ever-changing expectations of the gaming community, it is
essential to take into account the feedback of gamers throughout the game development and
maintenance processes. Traditionally, such feedback has been difficult to acquire. However, the recent trend of digitally distributing games has improved the process of providing and collecting feedback. For example, digital distribution platforms allow users to buy, download, and review thousands of PC games (e.g., through the Steam platform) and hundreds of thousands of mobile game apps (e.g., through the Google Play store). These reviews contain valuable information about the gamer-perceived quality of a game, which can be leveraged by game developers to make decisions about how to evolve their games. Such valuable information is also available from other sources, such as game blogs and gameplay videos.

In this project, we study how we can automatically analyze the rich data that is available from the above resources. In particular, we study how we

can extract valuable information for software developers, which can in turn be used to make decisions about the evolution of their computer games.

2.0 * **Provide a full description of your research proposal outlining the following:**

- **Purpose**
- **Hypothesis**
- **Justification**
- **Objectives**
- **Research Method/Procedures**
- **Plan for Data Analysis**

Purpose: automatically analyze and extract useful information from several online resources about games, such as game reviews, game blogs and gameplay videos.

Hypothesis: We can fully automate the process of extracting useful information from these resources.

Justification: Computer games are a rapidly growing application genre. With a projected revenue of almost $138 billion in 2018, the gaming industry has significantly outgrown other popular entertainment industries, such as the movie industry. Because of the scale of the gaming industry, and the fact that gamers are extremely hard to please, it has become challenging, and often costly, to develop a successful game. Being able to automatically extract useful information from readily-available online user feedback will give game developers a competitive advantage.

Objectives: To leverage the data that is generated by the gaming community to steer the
evolution of computer games.

Research method and plan for data analysis: We will use quantitative and qualitative methods to conduct the research. In particular, we will use text, audio and video mining techniques. During the projects of the research program, we may conduct user surveys (via targeted emails) or user studies in which the participants are asked to manually verify the outcomes of our data mining techniques.

3.0 **Describe procedures, treatment, or activities that are above or in addition to standard practices in this study area** *(eg. extra medical or health-related procedures, curriculum enhancements, extra follow-up, etc)***:**

4.0 **If the proposed research is above minimal risk and is not funded via a competitive peer review grant or industry-sponsored clinical trial, the REB will require evidence of scientific review. Provide information about the review process and its results if appropriate.**

5.0 **For clinical trials, describe any sub-studies associated with this Protocol.**

2.2 Research Methods and Procedures

Some research methods prompt specific ethical issues. The methods listed below have additional questions associated with them in this application. If your research does not involve any of the methods listed below, ensure that your proposed research is adequately described in Section 2.1: Study Objectives and Design or attach documents in the Documentation Section if necessary.

1.0 * **This study will involve the following***(select all that apply)*

Surveys and Questionnaires (including internet surveys)

NOTE 1: Select this ONLY if your application SOLELY involves a review of paper charts/electronic health records/administrative health data to answer the research question. If you are enrolling people into a study and need to collect data from their health records in addition to other interventions, then you SHOULD NOT select this box.

NOTE 2: Select this option if this research ONLY involves analysis of blood/tissue/specimens originally collected for another purpose but now being used to answer your research question. If you are enrolling people into the study to prospectively collect specimens to analyze you SHOULD NOT select this box.

2.9 Surveys and Questionnaires (including Online)

1.0 **How will the survey/questionnaire data be collected (i.e. collected in person, or if collected online, what survey program/software will be used etc.)?**

Online, using Google Forms.

2.0 **Where will the data be stored once it's collected (i.e. will it be stored on the survey software provider servers, will it be downloaded to the PI's computer, other)?**

On the survey software provider servers. In addition, electronic copies of the survey will be encrypted and stored on a password protected computer in the department of Electrical and Computer Engineering at the University of Alberta.

3.0 **Who will have access to the data?**
The PI, and the student analyzing the data.

3.1 Risk Assessment

1.0 * **Provide your assessment of the risks that may be associated with this research:**
Minimal Risk - research in which the probability and magnitude of possible harms implied by participation is no greater than those encountered by participants in those aspects of their everyday life that relate to the research (TCPS2)

2.0 * **Select all that might apply:**

Description of Possible Physical Risks and Discomforts

No Participants might feel physical fatigue, e.g. sleep deprivation

No Participants might feel physical stress, e.g. cardiovascular stress tests

No Participants might sustain injury, infection, and intervention side-effects or complications

No The physical risks will be greater than those encountered by the participants in everyday life

Possible Psychological, Emotional, Social and Other Risks and Discomforts

No Participants might feel psychologically or emotionally stressed, demeaned, embarrassed, worried, anxious, scared or distressed, e.g. description of painful or traumatic events

No Participants might feel psychological or mental fatigue, e.g intense concentration required

No Participants might experience cultural or social risk, e.g. loss of privacy or status or damage to reputation

No Participants might be exposed to economic or legal risk, for instance non-anonymized workplace surveys

No The risks will be greater than those encountered by the participants in everyday life

3.0 * **Provide details of all the risks and discomforts associated with the research for which you indicated YES or POSSIBLY above.**

N/A

4.0 * **Describe how you will manage and minimize risks and discomforts, as well as mitigate harm:**
We will not collect any information that links survey responses to an individual.

5.0 **Is there a possibility that your research procedures will lead to unexpected findings, adverse reactions, or similar results that may require follow-up** *(i.e. individuals disclose that they are upset or distressed during an interview/questionnaire, unanticipated findings on MRI, etc.)***?**

○ Yes ● **No**

6.0 **If you are using any tests in this study diagnostically, indicate the member(s) of the study team who will administer the measures/instruments:**

Test Name	Test Administrator	Organization	Administrator's Qualification

There are no items to display

7.0 **If any research related procedures/tests could be interpreted diagnostically, will these be reported back to the participants and if so, how and by whom?**

3.2 Benefits Analysis

1.0 * **Describe any potential benefits of the proposed research to the participants. If there are no benefits, state this explicitly:**
The participants are game or software developers who could benefit from the outcome of the survey (which will be published in an academic journal). There are no direct personal benefits from participating in the survey.

2.0 * **Describe the scientific and/or scholarly benefits of the proposed research:**
The proposed research will teach us many things about how game developers leverage community-generated data to improve their game development processes.

3.0 **If this research involves risk to participants explain how the benefits outweigh the risks.**

4.1 Participant Information

1.0 * **Will you be recruiting human participants** *(i.e. enrolling people into the study, sending people online surveys to complete)***?**

● **Yes** ○ No

1.1 Will participants be recruited or their data be collected from Alberta Health Services or Covenant Health or data custodian as defined in the Alberta Health Information Act?

○ Yes ● **No**

4.2 Additional Participant Information

1.0 **Describe the participants that will be included in this study. Outline ALL participants** *(i.e. if you are enrolling healthy controls as well):*

They must be software or game developers, or computer science/engineering students.

2.0 * **Describe and justify the inclusion criteria for participants** *(e.g. age range, health status, gender, etc.):*

The online inclusion criterion is experience with building software or games, in a professional or academic manner.

3.0 **Describe and justify the exclusion criteria for participants:**

4.0 **Participants**

4.1 How many participants do you hope to recruit *(including controls, if applicable?)*
100
4.2 Of these, how many are controls, if applicable?
N/A
4.3 If this is a multi-site study, how many participants do you anticipate will be enrolled in the entire study?

5.0 **Justification for sample size:**
This sample should be large enough to get an adequate representation of

how game developers leverage community-generated data, especially because this research is mostly exploratory.

4.4 Recruitment of Participants (non-Health)

1.0 Recruitment

1.1 How will you identify potential participants? Outline all of the means you will use to identify who may be eligible to be in the study *(i.e. response to advertising such as flyers, posters, ads in newspapers, websites, email, list serves, community organization referrals, etc.)*
Tweeting the survey on Twitter via my lab's Twitter handle (https://twitter.com/asgaard_lab) and through posts in public groups on game development on Facebook. I will ask several game developers in my social network to retweet the survey on their Twitter accounts as well.

1.2 Once you have identified a list of potentially eligible participants, indicate how the potential participants' names will be passed on to the researchers AND how will the potential participants be approached about the research.
They will opt-in via Google Forms.

2.0 Pre-Existing Relationships

2.1 Will potential participants be recruited through pre-existing relationships with researchers *(e.g. Will an instructor recruit students from his classes, or a physician recruit patients from her practice? Other examples may be employees, acquaintances, own children or family members, etc.)*?

○ Yes ● **No**

3.0 Will your study involve any of the following? *(select all that apply)*
None of the above

4.5 Informed Consent Determination

1.0 Describe who will provide informed consent for this study*(i.e. the participant, parent of child participant, substitute decision maker, no one will give consent – requesting a waiver)*
The participant.

1.1 Waiver of Consent Requested
If you are asking for a waiver of participant consent, please justify

the waiver or alteration and explain how the study meets all of the criteria for the waiver. Refer to Article 3.7 of TCPS2 **and provide justification for requesting a Waiver of Consent for ALL criteria (a-e)**

1.2 Waiver of Consent in Individual Medical Emergency
If you are asking for a waiver or alteration of participant consent in individual medical emergencies, please justify the waiver or alteration and explain how the study meets ALL of the criteria outlined in Article 3.8 of TCPS2 (a-f)**.**

2.0 How will consent be obtained/documented? Select all that apply
Implied by overt action (i.e. completion of questionnaire)

If you are not using a signed consent form, explain how the study information will be provided to the participant and how consent will be obtained/documented. Provide details for EACH of the options selected above:
The participant will be asked to consent by responding 'Yes' to a mandatory question in the survey.

3.0 Will every participant have the capacity to give fully informed consent on his/her own behalf?
● **Yes** ○ No

4.0 What assistance will be provided to participants or those consenting on their behalf, who may require additional assistance? *(e.g. non-English speakers, visually impaired, etc.)*

5.0 * **If at any time a PARTICIPANT wishes to withdraw from the study or from certain parts of the study, describe when and how this can be done.**
Due to the anonymous nature of the survey, it is not possible to withdraw after the survey is submitted. Since we will not include incomplete survey results, participants can always opt out by not submitting the survey.

6.0 Describe the circumstances and limitations of DATA withdrawal from the study, including the last point at which participant DATA can be withdrawn *(i.e. 2 weeks after transcription of interview notes)*

7.0 Will this study involve any group(s) where non-participants are present? For example, classroom research might involve groups which include participants and non-participants.

○ Yes ● **No**

5.1 Data Collection

1.0 * **Will the researcher or study team be able to identify any of the participants at any stage of the study?**

○ Yes ● **No**

2.0 **Primary/raw data collected will be** *(check all that apply)***:**

Anonymous - the information **NEVER** had identifiers associated with it (eg anonymous surveys) and risk of identification of individuals is low or very low

3.0 **If this study involves secondary use of data, list all original sources:**

4.0 **In research where total anonymity and confidentiality is sought but cannot be guaranteed** *(eg. where participants talk in a group)* **how will confidentiality be achieved?**

5.4 Data Storage, Retention, and Disposal

1.0 * **Describe how research data will be stored, e.g. digital files, hard copies, audio recordings, other. Specify the physical location and how it will be secured to protect confidentiality and privacy.** *(For example, study documents must be kept in a locked filing cabinet and computer files are encrypted, etc. Write N/A if not applicable to your research)*

Electronic copies of the survey will be encrypted and stored on a password protected computer in the department of Electrical and Computer Engineering at the University of Alberta.

2.0 * **University policy requires that you keep your data for a minimum of 5 years following completion of the study but there is no limit on data retention. Specify any plans for future use of the data. If the data will become part of a data repository or if this study involves the creation of a research database or registry for future research use, please provide details.** *(Write N/A if not applicable to your research)*

N/A

3.0

If you plan to destroy your data, describe when and how this will be done? Indicate your plans for the destruction of the identifiers at the earliest opportunity consistent with the conduct of the research and/or clinical needs:
The data will be deleted five years after the publication of the research paper in which the results are described. This should be long enough to respond to any follow-up inquiries about the published paper.

Documentation

Add documents in this section according to the headers. Use Item 11.0 "Other Documents" for any material not specifically mentioned below.

Sample templates are available by clicking HERE.

1.0 Recruitment Materials:

Document Name	Version	Date	Description

There are no items to display

2.0 Letter of Initial Contact:

	Document Name	Version	Date	Description
	Invitation letter	0.02	3/11/2020 4:25 PM	

3.0

Informed Consent / Information Document(s):

3.1 What is the reading level of the Informed Consent Form(s):

3.2 Informed Consent Form(s)/Information Document(s):

	Document Name	Version	Date	Description
	Informed consent document	0.02	3/11/2020 4:25 PM	

4.0 Assent Forms:

Document Name	Version	Date	Description

There are no items to display

5.0 Questionnaires, Cover Letters, Surveys, Tests, Interview Scripts, etc.:

	Document Name	Version	Date	Description
	questionnaire_example.pdf	0.01	3/4/2020 2:32 PM	

6.0 Protocol/Research Proposal:

Document Name	Version	Date	Description

There are no items to display

7.0 Investigator Brochures/Product Monographs:

Document Name	Version	Date	Description

There are no items to display

8.0 Health Canada No Objection Letter *(NOL)*:

Document Name	Version	Date	Description

There are no items to display

9.0 Confidentiality Agreement:

Document Name	Version	Date	Description

There are no items to display

10.0 Conflict of Interest:

Document Name	Version	Date	Description

There are no items to display

11.0 Other Documents:

For example, Study Budget, Course Outline, or other documents not mentioned above

Document Name	Version	Date	Description

There are no items to display

Final Page

You have completed your ethics application! Click "Continue" to go to your study workspace.

This action will NOT SUBMIT the application for review.

Only the Study Investigator can submit an application to the REB by

selecting the "SUBMIT STUDY" button in My Activities for this Study ID:Pro00090947.