Consent Form- “Ryerson Virtual Reality Experiment”

# Title of the research study:

Studying Pedestrian Crossing Behavior Using Virtual Reality

# Research Team:

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# Introduction:

We hereby request your participation in a research project aimed at evaluating the performance of pedestrians at street crossing. Before agreeing to participate in this study, and before signing this consent form, please take the time to read, understand, and carefully consider the information provided below. We invite you to ask any question you might have to the researcher in charge of the project or the other members of the research team and to ask them to explain to you any word or information that is not clear.

# Presentation of the study and the specific objectives:

The objectives of this study are as follows: i) examine the crossing performance with respect to changes in vehicle type, traffic flow, and environmental characteristics, ii) explore the social influence of other pedestrians in crossing behavior, and iii) evaluate the effectiveness of virtual reality as a research method.

In order to reach our objectives, we are asking 500 participants to cross a simulated street in virtual reality for several times, while changing the surroundings. The crossing behavior will be studied by adopting several statistical models.

# Nature and length of your participation in this research project:

The simulated street crossing is shown Figure 1. The experiment starts with an orientation session to familiarize participants with the simulated environment in VR. Participants are asked to look around and cross an empty street, to learn walking confidently in VR. Then, each participant completes 12 sessions of the street crossing task. There will be a 5-minute break until the participants are asked to cross another 12 sessions. Additionally, participants understand that although cars would decelerate for them as needed when they cross the street, they are required to assume that drivers are not willing to yield to them when they made the crossing decision, and they are responsible for seeking a safe and comfortable gap to cross so that running across the intersection is not necessary.

The whole experiment will take less than 40 minutes.

A picture containing text, sky, outdoor

Description automatically generated

Figure 1: A screenshot of the virtual environment from a pedestrian’s viewpoint facing the street as if trying to make a crossing decision.

The task of the experiment is to cross the street after the first car passes by the participant. It should be noted that crossing before the ﬁrst car is invalid. Participants will be initially directed to the crossing point where the simulated trafﬁc stream would pass by. They will be asked to cross the street. That said, participants will complete 24 trials in two blocks of 12 trials, and they are allowed to rest between blocks. In each trial, once the participant is ready, the experimenter will start a scheduled trafﬁc ﬂow. Upon arrival at the destination, the participant gets back to the starting point and prepare for the next session.

# Participation requirement:

You should not have any history of vision problems, ear or brain/head disorders, or not have a cardiac pacemaker to participate in this study.

# Research benefits:

Although you will not derive any personal benefit from participating in this study, the knowledge acquired through your participation will improve understanding of pedestrian behaviors which can be used for planning, design and operations of autonomous vehicles and roadways.

# Disadvantages resulting from your participation in the research project:

Your participation in the research project will require 40 mins of your time. Also, research project could cause some exhaustion or discomfort which to avoid that, there is a 5-minute break between the blocks.

# Risks of participating in this study:

We will observe all the recommended procedures for on-campus Scholarly, Research, and Creative (SRC) activity with human participants, as mentioned in the following link in accordance with local public health guideline, to minimize the risks of contracting the COVID-19 virus.

https://www.ryerson.ca/research/covid-19/src-resumption/human-participant/

Even though participants voluntarily will accept to participate in our study, adults with any eye, ear, head or brain related issues, pregnant, under the influence of alcohol or drugs; digestive problems; emotional stress or anxiety; cold/flu, headaches, migraines, or earaches over the years or who has a cardiac pacemaker will not be chosen as potential participants.

Some people (about 1 in 4000) may have severe dizziness, seizures, eye or muscle twitching or blackouts triggered by light flashes or patterns, and this may occur while they are watching TV, playing video games or experiencing virtual reality, even if they have never had a seizure or blackout before or have no history of seizures or epilepsy. If you experience any of these symptoms, you should let us know immediately to discontinue the test and see a doctor.

This research project entails low risks of exhaustion. In order to minimize the probability that discomfort happens, each block is designed to take maximum 20 minutes including training which means the actual experiment will be less than 45 minutes. Also, we will ask you to not to only take a mandatory break every 30 minutes, but to take as many breaks as you need to minimize the risks resulting from the research project. Moreover, the volume of the VR and the inter-pupillary distance (IPD), are adjusted to the safest and optimized volume and distance which will be tested during the training session for each participant.

Safety protocols will be strictly carried out and applied during the data collection. Two of LITrans members will monitor the whole process/experiment at all time.

# Financial compensation:

We will offer a CAD20 voucher to compensate for your participation in our experiment~~.~~

# Compensation in case of prejudice and rights of the participant:

Should you suffer any prejudice as a result of your participation in this project, be informed that you are not giving up any of your rights, nor are discharging the researchers, the granting agencies or the institution from their legal and professional duties.

# Voluntary participation and withdrawal:

Your participation in this research project is voluntary. You can therefore choose to withdraw from it at any time without having to motivate your decision nor suffering any prejudice. Also, if they decide to prematurely withdraw from the project we will keep the data already collected and may use it for basic analysis purposes.

If the participant completed any part, we might still be able to use the data for that person for descriptive analysis. That said, although participant’s data cannot be used for modeling purposes, we can use the collected data to generally describe his/her behavior in street crossing in general.

# Confidentiality:

During the test/experiment you will be participating in, the researcher in-charge of the project will describe to you what a participant will have to do (training session and the actual experiment). Only the information that is needed for the safe execution of the research project will be collected. This information could include information about age, any ear/head/eye/brain disease or whether you have cardiac pacemaker or not, etc.

All the information collected within the framework of this study will remain strictly confidential within the legal limits. In order to preserve your identity and the confidentiality of the information you will provide us with, we will assign an ID to you. The data collected by the researcher in charge of the project will be kept and locked up in his/her office.

The researcher in charge of the project will use all the data for the sole objectives of the research project briefly described above. The data collected within the framework of the project could be published in scientific papers or be shared with other people during scientific conferences. However, no information that could lead to your identification will be contained in these publications or scientific communications.

For monitoring or control purposes your research file could be consulted by a person mandated by the Research Ethics Board of Ryerson University or by a person mandated by the research councils. All these individuals adhere to strict confidentiality policies.

You are entitled to consult your research file to verify the correctness of the collected information for as long as the researcher in charge of the project and the institution possess this information. However, to preserve the scientific integrity of the research project, you will have access to this information only at the completion of the data collection. Furthermore, if you want your data not to be used in the study, it will be removed upon your request.

The data collected could be useful in the ongoing research and future studies on the topic and related ones. We are also interested in before and after studies, once the treatments are actually applied in real-life. Therefore, the collected data will be kept for a 10-year period, after which it will be destroyed.

# Contact people:

Should you have any questions pertaining to the research project, you can communicate with Mohsen Nazemi, researcher in charge of the project at: (437) 986-4898. or by e-mail at: [mohsen.nazemi@ryerson.ca](mailto:mohsen.nazemi@ryerson.ca)

This study has been reviewed by the Ryerson University Research Ethics Board. If you have questions regarding your rights as a participant in this study please contact: Research Ethics Board c/o Office of the Vice President,

Research and Innovation, Ryerson University, 350 Victoria Street,

Toronto, ON M5B 2K3, 416-979-5042, [rebchair@ryerson.ca](mailto:rebchair@ryerson.ca)

**Name of the participant** ………………………………… Date of Birth ………………………...………

Address: ……………………………………………………………………………………...……………….

………………………………………………………...……........................… Postcode ………………….

Mobile: ……………………………………………… e-mail: ……………………………...........................

In the following part, please check any boxes that currently applies to you, or they have experienced over the years.

|  |  |  |
| --- | --- | --- |
|  | **Currently** | **Over the**  **past years** |
| Hear Disease/issue |  |  |
| Brain Disease/issue |  |  |
| Neurologic Disease/issue |  |  |
| Eye or vision disease/issue |  |  |
| Ear disease/issue |  |  |
| Gastrointestinal disease/issue |  |  |
| Emotional Stress or anxiety/issue |  |  |
| Headaches |  |  |
| Severe dizziness or seizures |  |  |

Please provide details of medication that must be administered: ………………………………………….

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**Emergency contact details:** (If different from above)

Name: ……………………………………………………………… Telephone no: …………….…………

Relationship to you: ……………………………………………………………………………….................

**CONSENT** (please read carefully)

1. I agree to taking part in the activities of this study.
2. I confirm that I do not suffer from any medical condition other than those listed above.
3. I understand that Ryerson Virtual Reality Experiment includes a photography and film component in which I will be both photographed and filmed. I understand that these images may be part of a final video clip.

Signed ………………………………….....................… Date: ……………………………