



CONSENT FORM

Project title: Visualizing Uncertainty with Chromatic Aberration

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Other researchers

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Introduction

We invite you to take part in a research study being conducted by Rashidul Islam, who is an MCS (Master of Computer Science) student at Dalhousie University. Choosing whether or not to take part in this research is entirely your choice. There will be no impact to you if you decide not to participate in the research. The information below tells you about what is involved in the research, what you will be asked to do and about any benefit, risk, inconvenience or discomfort that you might experience.

You should discuss any questions you have about this study with Rashidul Islam or Dr. Stephen Brooks. Please ask as many questions as you have and we will be happy to answer your questions. If you have questions later, please contact Rashidul Islam.

Purpose and Outline of the Research Study

We have a new technique for displaying uncertain information in a visualization. The new visualization approach has been developed on a website that contains the new design. There are several possible ways to visualize uncertain data. So, it is important to assess how effective his new technique is compared to other possible techniques. To evaluate the new visualization technique the study will compare this new method with an existing approach that visualizes uncertainty with a special color palette. The two visualization approaches will be shown to users in an interactive website. The users will then be asked some question about the visualizations, and their feedback will be recorded.

Who Can Take Part in the Research Study

Anyone can participate in this study who has basic knowledge for recognizing simple shapes such as circles, rectangles, ellipse, partial filling of circles etc. They also need to have access to a computer browser; for instance: Firefox, have good internet connection, and have a microphone connected to the computer to communicate with researcher. In addition, participants must have color vision and not be impaired by color blindness.

What You Will Be Asked to Do

If you decide to participate in this research, you will be asked to navigate to a web application through your computer browser (Firefox). You will be asked to connect to a meeting with an

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audio connection and screen sharing with Skype or Teams. Your audio and shared screen will be recorded for the study evaluation. You will be recommended to close all other applications besides the navigated application and the communication software itself. You have to complete the survey. If you have any questions or need clarification, then researcher can explain as he will be available to you for the entire duration. The length of the session would be approximately 1 hour.

Possible Benefits, Risks and Discomforts

Benefits: As a user you will be able interact with new types of visualizations. Other than that, there will not be any direct benefit.

Risks: Looking at images that contain colors that are blurry may produce some eye strain. Also, the data used in the examples are country level Covid 19 statistics which may cause some concern for some participants. Beyond these noted potential minor issues, no significant risks are anticipated with this study beyond being bored or fatigued or confused by using a new piece of software just like what you may feel for using any other new software. To reduce these discomforts, we will offer you breaks between activities whenever you need.

Your audio and screen share will be recorded and will be stored in secure space in our Dalhousie University server using your email address. So, until the study is evaluated, it will remain identifiable only by the researcher but no one else will have access to it. At the end of the research evaluation all data will be securely erased by researcher.

The researcher will use their Dalhousie University credentials for the Microsoft Teams meeting, which will ensure that the Teams meeting recordings are securely stored in Canada. However, during the live Teams meeting, audio and video content is routed through the United States, and therefore may be subject to monitoring without notice, under the provisions of the US Patriot Act while the meeting is in progress. After the meeting is complete, meeting recordings made by Dalhousie are stored in Canada and are inaccessible to external authorities.

However, we can alternatively use Skype if you prefer. Although it is a widely used conferencing tool, we do not have detailed internal knowledge about their data routing. So, similar to a Teams meeting, it is possible that Skype users can also be subject to hidden monitoring.

Compensation / Reimbursement

Every participant will receive compensation of \$10 (Walmart/Amazon E-Gift card) and it will be given from the researcher to the participant's email after the study. The compensation will be given even if the participant does not finish the study.

How your information will be protected:

Before starting the study we will inform you that your screenshare, questionnaire/answers, conversation will be recorded for future use and this information will be stored by the research team and only they will know about your participation information.

The information that we will take from you will remain highly confidential and secure. Only the research team at Dalhousie university who work with us have access to this information

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and all of us have an obligation to keep all these study information protected from any kind of unauthorized access. Your identity information (name and contact information) also be securely stored separately in an encoded approach. Instead of using your name or contact information, we will create a new ID number by encrypting your base information and which will be used as your participation number. In addition to that, all information will be kept secure in an encrypted file on the researcher's password-protected computer, and we will not maintain any paper/printed documents.

Since the study is a core component of our thesis research, we will explain and share our findings in the researcher's thesis report and thesis's defense. We expect you allow us to use your quotes in our report if needed. But the report will not include any individual information but group results. This means that nobody will be able to identify a single participant's information from our reports.

If You Decide to Stop Participating

You are fully free to leave the study at any time. If you want to stop participating during the study, you can also decide whether you want to allow us to use or remove any of the information that you have given us up to that point. If you want not to keep your participation in the study after completing the study and want us to remove your data, then you can decide for up to 1 week. After that time, we will remove your data, but your responses will be anonymized in an analysis report and so there will be no way to trace your data individually.

How to Obtain Results

At the end of the study, we will provide you with a short description of group results but not individual results. You can obtain these results by letting researcher know during participation.

Questions

You are always welcome to reach out us with whatever questions or concerns you may have about your participation in this research study. Please contact at any time to Md Rashidul Islam at +1 (902) 448 3533, md313724@dal.ca or Dr. Stephen Brooks at sbrooks@dal.ca with your questions, suggestions, comments, or concerns about the research study.

If you have any ethical concerns about your participation in this research, you may also contact Research Ethics, Dalhousie University at (902) 494-3423, or email: ethics@dal.ca (and reference REB file # 2022-6028).

Signature

Signatures will not be required as part of this informed consent process. Your email reply with assent will be considered as consent.