

## Consent Form

**Project title**

State of Diversity in the Ethereum Blockchain

**Study investigators**

UNIVERSITÉ DE MONTRÉAL

Mr. Benoîr Baudry

Full Professor

Ms. Nadia Gonzalez

Master's student

**Invitation to participate**

You are being invited to participate in a research study on the state of diversity in the Ethereum Blockchain. Your expertise in Ethereum and participation in the community will add to our research. Choosing whether to participate is entirely your choice. If you decide not to participate, there will be no negative impacts on your relationship with the researcher. The information provided in this form tells you about what is involved in the research, what you will be asked to do, and any potential risks or benefits. Please read this form carefully, take all the time you need, and ask any questions you may have.

During the research study, we will tell you about any significant finding that could affect your willingness to continue to participate in this study.

**Purpose of the research study**

While prior research has explored software diversity and client diversity within Ethereum, there is no comprehensive study on how software diversity naturally emerges and is maintained within a large decentralized system. Existing work focuses mainly on controlled or highly centralized systems, where diversity is costly but manageable.

Our study is the first to analyze the state of software diversity across the entire Ethereum blockchain. We aim to identify the methods, tools, and organization that the Ethereum Foundation and the surrounding community have applied to guarantee security through software diversity. The information collected will help future blockchains and decentralized systems to enhance their security and resilience.

## **What you will be asked to do**

If you decide to participate in this research, you will be asked to join one online meeting via the Zoom platform. This meeting will take approximately 30 minutes and will involve taking part in an individual interview. During this session, you will be asked about the dependency management practices you follow in open-source software projects you contribute to. With your permission the interview will be audio recorded and then transcribed to accurately record your views and opinions. If you would prefer the interview not to be recorded, only written notes will be taken.

## **Who can take part in the research study?**

To participate in this study, you must be a software developer over 18 years old who actively contributes to open-source projects and have a basic proficiency in English. We are seeking a total of 8 participants.

## **Possible risks and benefits**

### **Risks**

There are no known or foreseeable risks associated with participation in this research project. The interview will last 30 minutes and the interviewee can leave the interview at any time, and you do not have to answer any questions that you do not want to. You can also withdraw your participation in the project at any time with no effect on your relationship with the research team in any way. By agreeing to participate in this research you are not giving up or waiving any legal rights in the event that you are harmed during the research.

### **Benefits**

There is no guarantee that you will benefit directly from participating in this study. However, the interviews will provide you with the opportunity to voice your opinion on your experiences and will hopefully help shape future best practices for developers and package managers, potentially benefiting the broader software development community.

### **Compensation**

You will not receive any compensation for participating in this study.

### **Privacy and confidentiality**

All data collected and recorded during the interviews will be kept on the local hard drives of team members' computers – all of which are password protected. The transcriptions of the interviews will be retained for a period of seven years. While the data will not be anonymized during the analysis or storage phases, any published results will be fully anonymized to ensure that no personal information, including names, is disclosed. The audio recordings will not be stored since they are not necessary for our purposes.

The personal information collected in this research project is handled in accordance with Université de Montréal research data management and privacy policies and with applicable Quebec legislation. In addition to protecting your personal information, these laws and policies give you the

right to request access to, and correction of, your personal information. You also have the right to file a complaint with the Commission d'accès à l'information du Québec if you think your personal information has been handled improperly.

### **Reporting of results**

Although the project outcomes will be determined by the research findings, possible research products will include: articles in scientific journals, online blogs, and plain language summaries. We plan to publish in the Springer's journal Empirical Software Engineering. We will only report results in a way that you will not be identified in our reports. Any quotes will be anonymized and will not be attributed to a specific individual. If you wish to be informed of the results of the research, please indicate this on the signature page below. A summary of the report will be sent to you alongside the paper published at the end of the study.

### **Withdrawing from the study**

Your participation in this study is entirely voluntary, and you are under no obligation to participate. If you decide to participate but later change your mind, you are free to withdraw at any time without any consequences. If you decide to withdraw, your data will also be removed, provided this occurs before the publication process has been initiated. After that point, it will no longer be possible to delete your data. Refusing to participate or choosing to withdraw will not affect your relationship with the research team in any way, even if you have professional links with them.

### **Conflicts of interest**

None of the researchers have any conflicts of interest in this study.

### **Questions and contact information**

If you have any questions about the study or would like more information, please contact: Nadia Gonzalez Fernandez by phone at 438 399 6575 or by email at [nadia.gonzalez.fernandez@umontreal.ca](mailto:nadia.gonzalez.fernandez@umontreal.ca).

For any concerns about your rights or the responsibilities of the researchers regarding your participation in this project, you can contact the Research Ethics Committee by phone at 514 343-6111 or by email at [cerves@umontreal.ca](mailto:cerves@umontreal.ca) or visit the website: <https://crr.umontreal.ca/ethique-humaine/participants/>.

If you have any complaints regarding your participation in this research, you can contact the ombudsman (a “citizen protector”) of the Université de Montréal, at the telephone number 514-343-2100 or at the email address [ombudsman@umontreal.ca](mailto:ombudsman@umontreal.ca) (the ombudsman accepts collect calls).

### **Signature Page**

**Project title:** State of Diversity in the Ethereum Blockchain

### **Statement of consent**

By signing this form, I agree that:

- The study has been explained to me
- All my questions have been answered
- Possible harm and discomforts and possible benefits (if any) of this study have been explained to me
- I have been told that my personal information will be kept confidential

In addition, I understand that:

- I have the right not to participate and the right to stop at any time
- I may refuse to participate without consequence
- I have a choice of not answering specific questions
- I am free now, and in the future, to ask any questions about the study
- No information that would identify me will be released or printed without asking me first
- I will receive a signed copy of this consent form

You can still participate in the research if you select no:

I agree that I may be quoted directly and anonymously  yes  no

I agree that the interview may be audio recorded  yes  no

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Name

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Signature

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Date

Please provide an email address below if you would like to be sent a summary of the study results.

Email address: \_\_\_\_\_

**Signature of the person obtaining consent**

By signing this form, I attest that:

- I have explained the study to the prospective participant
- I answered all their questions

- I provided a copy of this consent form to the participant
- The participant seemed to understand the consent form and agreed to participate

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Name

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Signature

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Date