

## CONSENT TO PARTICIPATE IN RESEARCH

### Research Study: Cybersecurity and Robotics Curriculum for High School Students

Dear Teacher:

Vanderbilt University is conducting research on learning computer programming with special emphasis on cybersecurity and robotics. RoboScape, a variant of NetsBlox (<https://netsblox.org>), our web-based computer programming environment helps users program robots and teach cybersecurity. Vanderbilt researchers will be conducting a Professional Development (PD) workshop showing you how to create robot control programs as you use the RoboScape system. We will also use these programs to illustrate cyber-security issues. Participation in this study is voluntary. We do not think you will be harmed in any way by participating in the research. We hope you will learn a lot by attending this program.

We are inviting you to participate in this research. We think that working with robots and learning about related cybersecurity issues are a good way to improve problem-solving skills and promote computational thinking. Throughout the program, you will learn various computer science concepts and how to implement related tasks in your classroom. These will be illustrated through examples and then you will be assigned programming problems to solve using these concepts. As researchers, we will also work with you as you build and test your programs. We will work closely with you to observe you and provide you with any help when you need it. All the software tools, programs and other educational material (except for computers and robots) will be provided to you free of charge, so that you can implement the program in your school if you wish.

The instruction for the material and guidance for how to use the system will be provided by Vanderbilt researchers. The program will take place over 1 week, Monday through Friday from 9 am till 4 pm with a one-hour lunchbreak at noon.

At the beginning of the first day, you will be asked to complete a pre-test on paper. The pre-test will consist of questions about you including your programming background (if any) and some computer science problems pertaining to the week's curriculum. Similarly, at the conclusion of the study you will be asked to complete a post-test. Note that these tests are not given to test you and your abilities, their aim is to test whether the educational material we created are useful or not. At the conclusion of the PD, you will be asked to complete an anonymous survey as well. Our aim is to see how useful the tools and the educational material we created are and how to improve them.

All of your work will be collected as logs on a secure server that we set up for the study, and ensure that it is not accessible by others. In addition, we may record audio and screen-capture video as you work on our cybersecurity tasks to learn more about your problem-solving processes and help us identify potential improvements to our tools and curriculum. We will analyze the data at the end of the study. Information on your participation in the research will be kept as confidential as legally possible. When reporting our findings, no participant will be identified by name. All data will be kept at a secure location at Vanderbilt University for a period not to exceed 5 years.

Date of IRB Approval: 04/19/2019

**Institutional Review Board**

After that period, all identifying data will be destroyed and only de-identified data will be maintained. All reasonable efforts will be made to keep personal information in your work private and confidential, but absolute confidentiality cannot be guaranteed. The information may be shared with institutional/governmental authorities (such as the Vanderbilt Institutional Review Board) if we are required to do so by law. At the end of the study, we will share our research results with you if you so desire.

Participation in this study is voluntary. We do not think you will be harmed in any way by participating in the research. We hope you will learn a lot by working with RoboScape. In addition, we offer \$200 compensation for your time. Also, we are willing to work with your school/district in order for you to get PD credit for your participation in the workshop.

Note that you can withdraw from the study at any time by telling the researchers, or calling either Akos Ledeczi at +1(615) 343-8307 or the Vanderbilt University Institutional Review Board at +1 (615) 322-2918 if you have additional questions. If you withdraw, data related to you, such as computer logs, will not be used in our research in any way.

Sponsorship: This research is being sponsored by the U.S. Department of Defense. DoD representatives are authorized to review research records.

If you agree to participate in this research, please complete and sign the form below. We appreciate your cooperation in our research. If you have any questions about this research, please call Akos Ledeczi at +1 (615) 343-8307.

Yours sincerely,



Dr. Akos Ledeczi

Professor of Computer Engineering

email: [akos.ledeczi@vanderbilt.edu](mailto:akos.ledeczi@vanderbilt.edu)

**STATEMENT:**

**I have read this consent letter and the material contained in it. All of my questions have been answered, and I freely and voluntarily choose to participate. I understand that I may withdraw at any time.**

**Your Name**

**Signature**

**Date** **Institutional Review Board**  
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