

Thesis Registration Form

Student's Data:

Student's Name: Tsinadze Zurab

Student's Neptun code: PRRXNH

Course Data:

Student's Major: Computer Science BSc

I have an internal supervisor

Internal Supervisor's Name: Porkoláb Zoltan

Supervisor's Home Institution: ELTE Faculty of Informatics, Dept. of Programming Languages and Compilers

Address of Supervisor's Home Institution: H-1117 Pázmány Péter stny. 1/c Budapest

Supervisor's Position and Degree: Associate Professor, PhD.

Thesis Title: Finding Security Vulnerabilities with Static Code Analysis

Topic of the Thesis:

(Upon consulting with your supervisor, give a 150-300-word-long synopsis of your planned thesis.)

Static Code Analyzers perform analysis on computer software without actually executing it. Warnings emitted by such tools gives developer free, fast, and anonymous code review. Static Analysis can be used to check for certain types of problems, for which it is impossible to write tests, for example, mistakes that cause undefined behavior. LLVM's open-source Clang Static Analyzer is one of the most popular and powerful tools for C, C++, and Objective-C code. The SEI CERT C/C++ Coding Standard is a set of rules and recommendations for secure coding. Failing to enforce any of these rules could result in a serious security problem and could cost companies their reputation, as well as money, and face legal issues. Hence, it would be good if enforcing such rules could be automated. One way to do this is by using Static Code Analyzers. The aim of the thesis work will be to extend the static analyzer toolset of the LLVM framework to cover SEI CERT Rules related to incorrect usage of the Environment. The program will be written in C++. The Output of the work is planned to be open-sourced as part of the LLVM framework.

Budapest, 2020.11.24.