**FACULTY
OF INFORMATION
TECHNOLOGY
CTU IN PRAGUE**

Supervisor's statement of a final thesis

Supervisor: MSc. Thomas Sermpinis
Student: Bc. Pavel Khunt
Thesis title: Vehicle On-Board Charging Security Scanner
Branch / specialization: Computer Security
Created on: 29 January 2024

Evaluation criteria

1. Fulfillment of the assignment

▸ [1] **assignment fulfilled**
  [2] assignment fulfilled with minor objections
  [3] assignment fulfilled with major objections
  [4] assignment not fulfilled

Assignment was fulfilled successfuly by the student, covering all the objectives of the initial assignment.

2. Main written part   85 / 100 (B)

The thesis is considered to be of sufficient length. During the process of the thesis, the student acted proactively, and performed the appropriate amount of research, needed for such a complicated topic, which was imprinted successfully in chapter 1 of the thesis. A large part of relevant citations was also taken into account, which are included in the theoretical parts of the thesis.

One weakness in the thesis can be attributed to its English proficiency, as certain sections appear more complex than necessary due to lengthy sentences, abrupt stops, and inconsistent paragraph connections.

3. Non-written part, attachments   100 / 100 (A)

The software, which was developed as the main part of this thesis, exceeds our expectations and completely fulfils the target assignment. The student proved his proactiveness, by not only following the assignment requirements for the developed tool, but also following proper development practices and developing the tool in a modular way, which will help with the adoption and extension of the tool in the industry.

Despite the several unforeseen challenges which were faced by the student, due to the specific hardware which was supplied to him for the development of the software, he

managed to find ways to overcome them efficiently, and write a tool which represents the effort he put into it, as well as create a tool which can be supported by hardware that was not available during the development period.

4. Evaluation of results, publication outputs and awards ⠀⠀⠀100/100 (A)

I strongly believe that the thesis has unique aspects, which were never presented in the industry before, and can be utilized in practice by automotive security researchers and development teams. I would highly suggest drafting a paper and releasing the tool as an open source project. Additionally, I believe that the research can stand among others in big academic and commercial cybersecurity conferences, while the software can also be presented in applicable events of the industry, targeted to innovative cybersecurity tools.

5. Activity of the student

[1] excellent activity
▸ [2] **very good activity**
[3] average activity
[4] weaker, but still sufficient activity
[5] insufficient activity

The student was very active throughout the whole process of the thesis. A slight issue that was observed, was that the student while proactively setting deadlines, he didn't meet some of the agreed deadlines. The main reason behind it, was the strive for code of exceptional quality, but this had a direct effect on the final deliverable deadlines and the time allocated for write and review of the thesis.

Striving for exceptional work is always preferred, but during his professional career, balancing deadlines and expectations is of high importance, and I hope that throughout the process of writing this thesis, he learned how to do so.

6. Self-reliance of the student

[1] excellent self-reliance
▸ [2] **very good self-reliance**
[3] average self-reliance
[4] weaker, but still sufficient self-reliance
[5] insufficient self-reliance

The student was mostly self-reliable. Most of the time, the ideas were coming from the students side, while in some cases, the lack of extensive expertise in the automotive industry was acting as a blocker, which I had to push and unblock.

I appreciate the fact that he managed to be self-sustained for most of the thesis, with minimal interventions from my side, but as with the deadlines, a balance between self-reliance and adjusting realistic expectation has to be obtained by the student during his professional career.

The overall evaluation   90 /100 (A)

The student conducted extensive research in the whole spectrum of On Board Charging, available research and tools. He discovered innovative ways to construct a tool which can be part of an automotive security researcher's arsenal, and constructed concrete research after his extensive analysis of the topic. I am strongly convinced that the entire thesis outcome is novel, and worth publishing in academic journals and conferences.

Additionally, he was constantly proving his personal interest for the topic, and demonstrated his ability of personally overcoming several serious challenges that were faced along the way. Taking in mind the aforementioned information, and considering that he successfully fulfilled and exceeded the expectations of the given assignment, I consider the thesis worth of an A.

Instructions

Fulfillment of the assignment

Assess whether the submitted FT defines the objectives sufficiently and in line with the assignment; whether the objectives are formulated correctly and fulfilled sufficiently. In the comment, specify the points of the assignment that have not been met, assess the severity, impact, and, if appropriate, also the cause of the deficiencies. If the assignment differs substantially from the standards for the FT or if the student has developed the FT beyond the assignment, describe the way it got reflected on the quality of the assignment's fulfilment and the way it affected your final evaluation.

Main written part

Evaluate whether the extent of the FT is adequate to its content and scope: are all the parts of the FT contentful and necessary? Next, consider whether the submitted FT is actually correct – are there factual errors or inaccuracies?

Evaluate the logical structure of the FT, the thematic flow between chapters and whether the text is comprehensible to the reader. Assess whether the formal notations in the FT are used correctly. Assess the typographic and language aspects of the FT, follow the Dean's Directive No. 52/2021, Art. 3.

Evaluate whether the relevant sources are properly used, quoted and cited. Verify that all quotes are properly distinguished from the results achieved in the FT, thus, that the citation ethics has not been violated and that the citations are complete and in accordance with citation practices and standards. Finally, evaluate whether the software and other copyrighted works have been used in accordance with their license terms.

Non-written part, attachments

Depending on the nature of the FT, comment on the non-written part of the thesis. For example: SW work – the overall quality of the program. Is the technology used (from the development to deployment) suitable and adequate? HW – functional sample. Evaluate the technology and tools used. Research and experimental work – repeatability of the experiment.

Evaluation of results, publication outputs and awards

Depending on the nature of the thesis, estimate whether the thesis results could be deployed in practice; alternatively, evaluate whether the results of the FT extend the already published/known results or whether they bring in completely new findings.

Activity of the student

From your experience with the course of the work on the thesis and its outcome, review the student's activity while working on the thesis, his/her punctuality when meeting the deadlines and whether he/she consulted you as he/she went along and also, whether he/she was well prepared for these consultations.

Self-reliance of the student

From your experience with the course of the work on the thesis and its outcome, assess the student's ability to develop independent creative work.

The overall evaluation

Summarize which of the aspects of the FT affected your grading process the most. The overall grade does not need to be an arithmetic mean (or other value) calculated from the evaluation in the previous criteria. Generally, a well-fulfilled assignment is assessed by grade A.