

## I. IDENTIFICATION DATA

<b>Thesis title:</b>	<b>Profilování a detekce IoT útoků v telnetovém provozu</b>
<b>Author's name:</b>	<b>Bc. Simona Musilova</b>
<b>Type of thesis :</b>	Master
<b>Faculty/Institute:</b>	Czech Technical University in Prague
<b>Department:</b>	Department of Computer Science
<b>Thesis reviewer:</b>	Doc. Ing. Tomas Pevny Ph.D.
<b>Reviewer's department:</b>	Department of Computer Science

## II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	<b>A</b>
<i>How demanding was the assigned project?</i>	
The assignment was very demanding, as it consisted from implementation of a parser of a telnet protocol and its use in statistical methods. Therefore the author has to master two very different areas.	

<b>Fulfilment of assignment</b>	<b>A</b>
<i>How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.</i>	
The assignment was fulfilled.	

<b>Methodology</b>	<b>C</b>
<i>Comment on the correctness of the approach and/or the solution methods.</i>	
The first part of the thesis dealing with parsing of the telnet protocol was very good. The author well motivated the need for parsing the telnet protocol and described problems caused by its stateful nature.	
The second. statistical part of thesis has its hiccups. While the author well used the knowledge she has learned on university courses, this parts lacks the survey of state of the art method in the profiling of overs of any service, not necessarily telnet (from a statistical point of view, I do not see a bug difference between telnet and other services and I believe that other works can be used here). This important omission severely downgrades the thesis in my view.	

<b>Technical level</b>	<b>C</b>
<i>Is the thesis technically sound? How well did the student employ expertise in the field of his/her field of study? Does the student explain clearly what he/she has done?</i>	

I am little bit surprised that although the thesis many times emphasise the need for low computational complexity, the parser is written in interpreted language, which makes the solution inherently slow. Why not use other language like c/c++?

In the statistical part of thesis, it is stated that weights in distance (Equation 4.2) were set by heuristic, which implies they were set by human. I do not believe that a human can set weights with 11 digits of precision. This raises doubts, how they were actually set.

The experimental evaluation is performed on four users with 27 profiles in total. This is so few that I doubt the evaluation has any statistical meaning. Again, I do miss comparison to the state of the art, as mentioned above. Table 5.7 shows many performance measures (again with six digits of precision), but it is not clear, if it is sufficient or not.

## Formal and language level, scope of thesis

**A**

*Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?*

The language is crystal clear. The motivation is repeated too often. In some parts, I would appreciate to describe the topic in more detail rather than referring to external sources.

## Selection of sources, citation correctness

**C**

*Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?*

As mentioned above, I miss the prior art on user profiling, which is a very well researched topic.

## Additional commentary and evaluation (optional)

*Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.*

Please insert your comments here.

## III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

The thesis is very complex and represents a lot of work. I regret that the student has not consulted the statistical part with someone proficient in this field.

The grade that I award for the thesis is **B**.

Date: **22.1.2020**

Signature: