

## I. IDENTIFICATION DATA

<b>Thesis name:</b>	Should I click on a link? Machine Learning to Protect from Cyber Attacks on the Web
<b>Author's name:</b>	František Střasák
<b>Type of thesis :</b>	Master Thesis
<b>Faculty/Institute:</b>	Faculty of Electrical Engineering
<b>Department:</b>	Computer Science
<b>Thesis supervisor:</b>	Sebastian Garcia
<b>Supervisor's department:</b>	Computer Science

## II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	<b>Extraordinarily Challenging</b>
<i>Evaluation of thesis difficulty of assignment.</i>	
<p>The topic of the thesis of Frantisek was very very hard. The decision of analyzing and correctly detecting if a URL is malicious or not is one of the most challenging problems of security. This is because URLs and the web in general is a very generic technology which is not structured and is used for thousands of different problems. This unstructured and the variability of web pages attacks makes this a challenge worth of a company.</p>	

<b>Satisfaction of assignment</b>	<b>Fulfilled</b>
<i>Assess that handed thesis meets assignment. Present points of assignment that fell short or were extended. Try to assess importance, impact or cause of each shortcoming.</i>	
The work was completely fulfilled to the expectations	

<b>Activity and independence when creating final thesis</b>	<b>B. Very Good</b>
<i>Assess that student had positive approach, time limits were met, conception was regularly consulted and was well prepared for consultations. Assess student's ability to work independently.</i>	
<p>Frantisek grew a lot during his thesis work. He learnt how to work more and more independently, how to plan better, how to meet his deadlines and how to write a good thesis. He had a positive approach and consulted very well. He extended his thesis one semester, but this was a good call to be able to meet the deadlines.</p>	

<b>Technical level</b>	<b>A. Excellent</b>
<i>Assess level of thesis specialty, use of knowledge gained by study and by expert literature, use of sources and data gained by experience.</i>	

Frantisek specialised a lot for this thesis. From creating several datasets to creating ML models until implementing the solution in a real web page. The technical level is excellent.

## Formal and language level, scope of thesis

**C. Good**

*Assess correctness of usage of formal notation. Assess typographical and language arrangement of thesis.*

The formal language of the thesis is good, but the the English language still needs more improvements. However, Frantisek grew a lot his English skills and the thesis is in good shape.

## Selection of sources, citation correctness

**A. Excellent**

*Present your opinion to student's activity when obtaining and using study materials for thesis creation. Characterize selection of sources. Assess that student used all relevant sources. Verify that all used elements are correctly distinguished from own results and thoughts. Assess that citation ethics has not been breached and that all bibliographic citations are complete and in accordance with citation convention and standards.*

All the important references are included and the sources and citations were done correctly.

## Additional commentary and evaluation

*Present your opinion to achieved primary goals of thesis, e.g. level of theoretical results, level and functionality of technical or software conception, publication performance, experimental dexterity etc.*

This thesis presented a very hard problem to solve, which is even difficult for most security companies. Frantisek did a great work to get deep in the topic, having now a large expertise in how to better solve the issue. He not only achieved the goals but he did more than expected. The results are sound and useful, having applied his research in a real life webpage used continually. His results were presented in several non-academic conferences, and a final paper about this topic is under current writing.

### III. OVERALL EVALUATION, QUESTIONS FOR DEFENSE, CLASSIFICATION SUGGESTION

*Frantisek showed a very good and committed work in this thesis, fulfilling the goals and developing new techniques to improve the detection of malicious links and URLs*

I evaluate handed thesis with classification grade **A**



Date: **June, 17th, 2020**

Signature: