

I. IDENTIFICATION DATA

Thesis name:	Malware detection based on call graph similarities
Author's name:	Bc. Štěpán Dvořák
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Computer Science
Thesis supervisor:	Ing. Danila Khikhlukha, Ph.D.
Supervisor's department:	Click here to enter text.

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	extraordinarily challenging
<i>Evaluation of thesis difficulty of assignment.</i>	
Štěpán Dvořák in his thesis explore a very new and fast evolving area of graph neural networks (GNN). The application of GNN for executable files classification is a cutting edge of cybersecurity research.	
Satisfaction of assignment	fulfilled
<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>	
In his thesis, Štěpán Dvořák provides all the relevant information about PE files architecture as well as a detailed survey of existing methods for binary files classification. A novel approach proposed in the thesis shows intriguing results and suggests a new path for continuing the research.	
Activity and independence when creating final thesis	A - excellent.
<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>	
Štěpán Dvořák, by all means, is bright and dedicated researcher capable of conducting research independently. Starting with proposing an original idea and finishing with working on the text of the thesis Štěpán did a great job following the schedule.	
Technical level	A - excellent.
<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>	
The original method proposed in the thesis implemented by Štěpán Dvořák using the latest available frameworks. Also, a great job is done analyzing the results and comparing against the existing methods.	
Formal and language level, scope of thesis	A - excellent.
<i>Assess correctness of usage of formal notation. Assess typographical and language arrangement of thesis.</i>	
The thesis is very well logically structured and self-consistent.	
Selection of sources, citation correctness	A - excellent.
<i>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.</i>	
Štěpán Dvořák selected very well relevant sources of information and carefully cited them putting a clear line between novel ideas and borrowed ones.	
Additional commentary and evaluation	
<i>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.</i>	

Štěpán Dvořák has proposed a novel idea that is on the very forefront of the cybersecurity research. After the detailed literature survey, Štěpán formulates his method, describes the implementation, and provides a comprehensive analysis of the results and comparison with existing state-of-the-art. The research results are not only exciting but also suggest a direction for future research, that I sincerely hope Štěpán Dvořák will conduct.

III. OVERALL EVALUATION, QUESTIONS FOR DEFENSE, CLASSIFICATION SUGGESTION

Summarize thesis aspects that swayed your final evaluation.

I evaluate handed thesis with classification grade **A - excellent**.

Date: **10.6.2020**

Signature: Ing. Danila Khikhlukha, Ph.D.