

# Ly Vu Duc

## Curriculum Vitae

Vedere Lab

Forescout Technology B.V.

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## Education

- 2017–2022 **PhD candidate, Information Engineering and Computer Science**, *University of Trento*, Italy,  
Software supply chains security, Automated Program Repair, Open-source Software Security  
**Thesis title:** Software Supply Chain Security  
**Graduation date:** 03/2022.  
**Advisor:** Prof. Fabio Massacci
- 2015–2017: **Master of Science**, *Hongik University*, South Korea.  
**Thesis title:** Efficient Malware Classification Techniques Using Integrated Static and Dynamic Indicators  
**Advisor:** Prof. Seoung Oun Hwang
- 2010–2015 : **Bachelor of Engineering, Information Technology**, *Posts and Telecommunications Institute of Technology*, Vietnam.  
**Thesis title:** The research of rootkit on Windows systems  
**Advisor:** MSc. Phuc Le

## Publications

### Journal Articles

- 2020 Duc-Ly Vu, Trong-Kha Nguyen, Tam V Nguyen, Tu N Nguyen, Fabio Massacci, and Phu H Phung. Hit4mal: Hybrid image transformation for malware classification. *Transactions on Emerging Telecommunications Technologies*, volume 31, page e3789. Wiley Online Library, 2020.
- 2020 Trong-Kha Nguyen, Duc-Ly Vu, and Seong Oun Hwang. Effective feature selection based on manova. *International Journal of Internet Technology and Secured Transactions*, volume 10, pages 383–395. Inderscience Publishers (IEL), 2020.
- 2019 Duy-Phuc Pham, Duc-Ly Vu, and Fabio Massacci. Mac-a-mal: macos malware analysis framework resistant to anti evasion techniques. *Journal of Computer Virology and Hacking Techniques*, volume 15, pages 249–257. Springer, 2019.
- 2018 Trong-Kha Nguyen, Duc-Ly Vu, and Seong Oun Hwang. An efficient neural network model for time series forecasting of malware. *Journal of Intelligent & Fuzzy Systems*, volume 35, pages 6089–6100. IOS Press, 2018.

### In Conference Proceedings

- 2021 Duc-Ly Vu, Ivan Pashchenko, Fabio Massacci, Henrik Plate, and Antonino Sabetta. Lastpymile: identifying the discrepancy between sources and packages. In *Proceedings of the 2021 29th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering*. ACM, 2021.
- 2021 Duc-Ly Vu, Ivan Pashchenko, and Fabio Massacci. Please hold on: more time= more patches? automated program repair as anytime algorithms. In *Proceedings of the IEEE/ACM 43rd International Conference on Software Engineering Workshops*. IEEE Press, 2021.
- 2020 Duc-Ly Vu, Ivan Pashchenko, Fabio Massacci, Henrik Plate, and Antonino Sabetta. Typosquatting and combosquatting attacks on the python ecosystem. In *2020 IEEE European Symposium on Security and Privacy Workshops (EuroS&PW)*, pages 509–514. IEEE, 2020.

- 2020 Duc Ly Vu, Ivan Pashchenko, Fabio Massacci, Henrik Plate, and Antonino Sabetta. Towards using source code repositories to identify software supply chain attacks. In *Proceedings of the 2020 ACM SIGSAC Conference on Computer and Communications Security*, pages 2093–2095. ACM, 2020.
- 2020 Ivan Pashchenko, Duc-Ly Vu, and Fabio Massacci. A qualitative study of dependency management and its security implications. In *Proceedings of the 2020 ACM SIGSAC Conference on Computer and Communications Security*, pages 1513–1531. ACM, 2020.
- 2019 Duc-Ly Vu, Trong-Kha Nguyen, Tam V Nguyen, Tu N Nguyen, Fabio Massacci, and Phu H Phung. A convolutional transformation network for malware classification. In *2019 6th NAFOSTED Conference on Information and Computer Science (NICS)*, pages 234–239. IEEE, 2019.

## Research Experience

### Forescout Technologies B.V.

02/2022 – **Vedere Labs**, Security Researcher.  
Present

### AssureMoss Project

2019 – **Automated Program Repair, Software Supply Chain Attacks, Mining source code repositories**, European H2020 Project.  
01/2022 Present

### SAP Security Research, France

June, 2019 – **Open-Source Security: Safeguards and attack surface reduction**.  
August, 2019 Developing a method to identify software supply chain attacks in PyPI.  
Advisor : Henrik Plate, Antonino Sabetta, *Senior Researcher*, SAP Security Research ([Personal Web-page](#))  
March, 2020 – **Open-Source Security: Safeguards and attack surface reduction**.  
May, 2020 Developing a method to identify software supply chain attacks in PyPI.  
Advisor : **Henrik Plate, Antonino Sabetta**, *Senior Researcher*, SAP Security Research ([Personal Web-page](#))

### European Network for Cyber-security (NECS)

November, 2017 **Software Vulnerability Analysis**, European Network for Cyber-security.  
– November, 2020 Qualitative and Quantitative Software Vulnerability Analysis  
Advisor : Prof. Fabio Massacci ([Personal Web-page](#))

### Information Security Machine Learning Lab, Hongik University, South Korea

2015 – 2017 **Malware detection using machine learning**.  
Advisor : **Dr. Seong Oun Hwang**, *Professor, Department of Computer Science & Engineering*, Gachon University ([Personal Web-page](#))

### Bach Hung Khang Technology, Vietnam

January, 2015 **Developing and pentesting security tools on various systems including Windows, Linux, and Cisco**.  
– Dec, 2015  
Advisor : **Mr. Hung Tran**, *CEO*, BHK Tech ([Personal Web-page](#))

## Fellowships & Awards

2017 – 2020 **Marie Curie Research Fellowship** of European Network of Security Project  
2015 Receipt of three **Good students** scholarship at Posts and Telecommunications Institute of Technology.

## Certificates

**CCNA** by Cisco

**AI for everone** by deeplearning.ai

**Learning SQL Course** by Codecademy

**Learn the Command Line Course** by Codecademy

**Learn Web Scraping with BeautifulSoup Course** by Codecademy

**C1a English Language** by University of Trento, Italy

**Cleaning Data in Python Course** by DataCamp

**Convolutional Neural Networks in Tensorflow** by deeplearning.ai

**Excel Skills for Business: Intermediate I** by Macquarie Univeristy

**Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization** by deeplearning.ai

**Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning** by deeplearning.ai

**Natural Language Processing in TensorFlow** by deeplearning.ai

**Neural Networks and Deep Learning** by deeplearning.ai

**Programming for Everybody (Getting Started with Python)** by University of Michigan

**Python Data Structures** by University of Michigan

**Statistical Thinking in Python (Part 1) Course** by DataCamp

**Structuring Machine Learning Projects** by deeplearning.ai

**Understanding and Visualizing Data with Python** by University of Michigan

**Write Professional Emails in English** by Georgia Institute of Technology

**pandas Foundations Course** by DataCamp

## Software

**C2Ass** in *Simulate assembly code for learning purpose.*

**bandit4mal** in *A fork of Bandit tool with patterns to identifying malicious python code*

**wtfpython-vi** in *wtfpython in Vietnamese*

**virustotalIntelligence** in *A scanning tool supports detecting virus/malware by using VirusTotal.*

**LastPyMile** *A tool to detect code discrepancy in PyPI packages*

**p2src** *Automatic Identification of Source Code Repositories and Factors for Selecting New PyPI Packages*

## Computer skills

Programming Languages	Python, scikit-learn, keras, Rust, Tensorflow, Latex, pandas, Jupyter notebook, matplotlib, pytest, sphinx, HTML
Web Technologies	HTML, CSS, Flask, Web scraping (Selenium, beautifulsoup)
Database	SQL, redis, MongoDB, MySQL
Documentation	Latex, Markdown, MS Words
Security	Yara, Cuckoo, Capstone Disassembler, IDA Disassembler, pestudio, SAST
Networking	TCP/IP, Cisco
Networking and security tools	Wireshark, Burp suite, nmap, Kali, radare, Capstone disassembler, Cuckoo sandbox, Unicorn emulator

Operating system	Linux, MacOS, Windows
Software version control	Git, SVN
Software development tools	Vim, dependency management tools (pipenv)
Forensic tools	PE tools, file, PEiD, strings
Cloud/Virtual machines	Google Cloud, VMWare, VirtualBox

## Teaching Assistantship

Spring, 2021 : **ICT Innovation course**, University of Trento, Italy.  
 Spring, 2021 : **Cyber Risk Assesment**, University of Trento, Italy.  
 2015-2018 **Python Courses for System engineers**, BHK Tech, Vietnam.

## Referees

### Dr. Fabio Massacci

*Professor, Department of  
Computer Science & Engineering*  
 Institute name  
 ✉ fabio.massacci@ieee.org

### Dr. Antonino Sabetta

*Senior Researcher*  
*SAP Security Research*  
 France  
 ✉ antonino.sabetta@sap.com

### Dr. Henrik Plate

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*SAP Security Research*  
 France  
 ✉ henrik.plate@sap.com