Luca Massarelli

PhD Student in engineering in Computer Science

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Education

2017–   **Phd Student in Engineering in Computer Science**, *Department of Computer, Control, and Management Engineering Antonio Ruberti (DIAG) of Sapienza University of Rome*,
Subject: malware analysis, binary similarity, deep learning, Advisor: R. Baldoni.

2014–2017   **Master Degree in Physics**, *University of Rome "La Sapienza"*,
Thesis: Android Malware Family Classification based on DFA and SVM.

2010–2014   **Bachelor Degree in Physics**, *University of Rome "La Sapienza"*,
Thesis: Study of a mobile robot with a self-training neural network.

Other educational experience

02/2018   **Necs Winter School on Cybersecurity**, *Trento*.

07/2016   **Summer School: Introduction to cybersecurity**, *Sant'Anna, School of Advanced Studies*, Pisa.

Teaching Activity

03/2018–   **Teaching Assistant**, *University of Rome "La Sapienza", Piazzale Aldo Moro 5, Roma*,
Tutor for the exam "Sistemi di Calcolo" of the bachelor degree in engineering in computer science.

06/2018   **Lecturer**, *Istituto Pasteur Italia, Viale Regina Elena 291, Roma*,
Lectures on cyberbullying and fake news for primary school.

Professional Experience

15/07/2019– 05/10/2019   **Research Intern**, *Facebook Inc.*, London, Research on Natural Language Processing and Language Model.

06/2017– 09/2017   **Researcher**, *Consorzio Interuniversitario Nazionale per l'Informatica CINI, Via Ariosto 25, Roma*,
Research with focus in mobile malware analysis and classification.

09/2014– 05/2017   **Software analyst and developer**, *Nergal Consulting SRL, Viale Avignone 97, Roma*,
Research and development of software solutions for multiple reseach project in energetic and industrial field.

Skills

Programming Languages: C, Java, Python, Matlab.

Program analysis and reversing: IDAPro, Radare2, Angr.

Machine Learning: Tensorflow, Keras.

Publications

2019   **Massarelli L., Petroni F., Piktus A., Ott M., Rocktäschel T., Plachouras V., Silvestri F., Riedel S.**, *How Decoding Strategies Affect the Verifiability of Generated Text*, arXiv preprint arXiv:1911.03587.

2019   **Maggi F.M., Marrella A., Massarelli L. & Querzoni L.**, *Triage of IoT Attacks through Process Mining*, Proceedings of the 27th International Conference on Cooperative Information Systems (COOPIS), 2019.

2019   **Massarelli L., Di Luna G.A., Petroni F., Baldoni R. & Querzoni L.**, *SAFE: Self-Attentive Function Embeddings for Binary Similarity*, Proceedings of 16th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA), 2019, preprint: arXiv:1811.05296.

2019 **Massarelli L., Di Luna G., Petroni, F., & Querzoni, L., Baldoni, R.**, *Investigating Graph Embedding Neural Networks with Unsupervised Features Extraction for Binary Analysis*, Symposium on Network and Distributed System Security (NDSS), Workshop on Binary Analysis Research. 2019.

2017 **Massarelli, L., Aniello, L., Ciccotelli, C., Querzoni, L., Ucci, D., & Baldoni, R.** , *Android malware family classification based on resource consumption over time. In Malicious and Unwanted Software (MALWARE), 2017 12th International Conference on (pp. 31-38). IEEE..*

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Conferences

2019 **COOPIS 19**, *International Conference on Cooperative Information Systems.*

2019 **Black Hat 2019**, Las Vegas (USA), 7 - 8 August 2019.

2019 **DIMVA 2019**, *Conference on Detection of Intrusions and Malware & Vulnerability Assessment*, Gothenburg (SWE), 19 - 20 June 2019.

2019 **ITAL-IA 2019**, *Convegno Nazionale CINI sull'Intelligenza Artificiale*, Rome (IT), 18 - 19 March 2019.

2019 **NDSS 2019**, *Network and Distributed System Security Symposium*, San Diego (USA), 23 - 26 February 2019.

2019 **ITASEC 2019**, *Italian Conference on cybersecurity*, Pisa (Italy), 12 - 15 February 2019.

2018 **ITASEC 2018**, *Italian Conference on cybersecurity*, Milan (Italy), 6 - 9 February 2018.

Seminars

23/10/18 **Binary Similarity meets Machine Learning**, *Seminar for the course Malware Analysis of master degree in engineering Cybersecurity*, Universiy of Rome "La Sapienza".

23/10/18 **Machine Learning for Malware Analysis**, *Seminar for the course Machine Learning of master degree in engineering in computer science*, University of Rome "La Sapienza".

03/11/17 **Machine Learning for Malware Analysis**, *Seminar for the course Machine Learning of master degree in engineering in computer science*, University of Rome "La Sapienza".