

Fabio Pagani

AFFILIATION Postdoctoral Researcher, University of California Santa Barbara (UCSB)

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BIO I am a postdoctoral researcher working with Giovanni Vigna and Christopher Kruegel in the SecLab at UC Santa Barbara. My research interests focus on several aspects of systems security. Currently, I am actively involved in projects related to automated vulnerability discovery (in firmware blobs and Android applications), and related to human-assisted cyber reasoning systems.

I earned a Ph.D at EURECOM, where I was advised by Davide Balzarotti. Among other things, we investigated how non-atomic acquisitions impact the consistency of memory dumps, and we developed a framework to discover and to assess the quality of memory forensics heuristics.

When I am away from keyboard, I enjoy hiking, rock climbing, surfing, and playing chess.

EDUCATION **Postdoctoral Researcher** *Jan 2020-Current*
University of California, Santa Barbara, US

Doctor in Philosophy (PhD) *Jan 2016-Sept 2019*
Eurecom, France
Thesis: Advances in Memory Forensics

MSc in Computer Science *Feb 2013-Oct 2015*
Università degli Studi di Milano, Italy
Thesis: Defeating Return Oriented Programming Attacks Using Program Analysis Techniques
Graduated with a final grade of 110/110 cum laude

Internship *Feb 2015-May 2015*
Eurecom, France

Erasmus *Jan 2014-Jun 2014*
Uppsala University, Sweden

BSc in Computer Science *Sep 2009-Feb 2013*
Università degli Studi di Milano, Italy
Thesis: When Hardware Meets Software: A Bulletproof Solution to Forensic Memory Acquisition
Graduated with a final grade of 107/110

PUBLICATIONS

- [7] Fabio Gritti, Lorenzo Fontana, Eric Gustafson, **Fabio Pagani**, Andrea Continella, Christopher Kruegel, Giovanni Vigna. SYMBION: Interleaving Symbolic With Concrete Execution. In Proceedings of the IEEE Conference on Communications and Network Security (CNS) 2020
- [6] **Fabio Pagani**, Davide Balzarotti. Back to the Whiteboard: a Principled Approach for the Assessment and Design of Memory Forensic Techniques. In Proceedings of the 28th USENIX Security Symposium (USENIX Security 19) 2019
- [5] **Fabio Pagani**, Oleksii Fedorov, Davide Balzarotti. Introducing the Temporal Dimension to Memory Forensics. ACM Transactions on Privacy and Security (TOPS) 22, no. 2 (2019)

- [4] **Fabio Pagani**, Matteo Dell'Amico, Davide Balzarotti. Beyond Precision and Recall: Understanding Uses (and Misuses) of Similarity Hashes in Binary Analysis. In Proceedings of the Eighth ACM Conference on Data and Application Security and Privacy (CODASPY) 2018
- [3] Marius Muench, **Fabio Pagani**, Yan Shoshitaishvili, Christopher Kruegel, Giovanni Vigna, Davide Balzarotti. Taming Transactions: Towards Hardware-Assisted Control Flow Integrity Using Transactional Memory. In International Symposium on Research in Attacks, Intrusions, and Defenses (RAID) 2016
- [2] **Fabio Pagani**, Matteo De Astis, Mariano Graziano, Andrea Lanzi, Davide Balzarotti. Measuring the Role of Greylisting and Nolisting in Fighting Spam. In Proceedings of the 46th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN) 2016
- [1] Alessandro Reina, Aristide Fattori, **Fabio Pagani**, Lorenzo Cavallaro, Danilo Bruschi. When Hardware Meets Software: a Bulletproof Solution to Forensic Memory Acquisition. In Proceedings of the 28th Annual Computer Security Applications Conference (ACSAC) 2012

TALKS

- [1] **Fabio Pagani**. Memory Smearing: Myth Or Reality?. SANS DFIR Europe Summit 2019

AWARDS

- [2] Volatility Plugin Contest 2019, 5th place
- [1] Black Hat Europe 2016 Student Scholarship

SERVICE

Computers & Security (COSE)

TEACHING
EXPERIENCE

- Lecture on Memory Forensics (Cybercrime and Computer Forensics)** *Apr. 2019*
Eurecom, France
- Lecture on Python Optimization and Integration (Software Development)** *Dec. 2018*
Eurecom, France
- Lecture on Memory Forensics (Cybercrime and Computer Forensics)** *May 2018*
Eurecom, France
- Lecture on Python Optimization and Integration (Software Development)** *Dec. 2017*
Eurecom, France
- Lecture on Python Optimization and Integration (Software Development)** *Dec. 2016*
Eurecom, France
- Computer Programming - Teaching Assistant** *Sept. 2014 - Feb. 2015*
Università degli Studi di Milano, Italy

HACKING
COMPETITIONS

I am a core member of the NOPS team. Along with my teammates, I qualified twice for the CSAW Europe Finals (in 2017 we got 2nd place) and **won** hxp CTF 2018.