# 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

Universitá 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

Universitá 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

SERVICE Computers & Security (COSE)

TEACHING EXPERIENCE	<b>Lecture on Memory Forensics (Cybercrime and Computer Forensics)</b> Eurecom, France	Apr. 2019
	<b>Lecture on Python Optimization and Integration (Software Development)</b> Eurecom, France	Dec. 2018
	<b>Lecture on Memory Forensics (Cybercrime and Computer Forensics)</b> Eurecom, France	May 2018
	<b>Lecture on Python Optimization and Integration (Software Development)</b> Eurecom, France	Dec. 2017

**Lecture on Python Optimization and Integration (Software Development)**Dec. 2016

Eurecom, France

**Computer Programming - Teaching Assistant**Universitá 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.