



Fabio Pagani

AFFILIATION	Postdoctoral Researcher, University of California Santa Barbara (UCSB)		
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BIO	<p>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.</p> <p>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.</p> <p>When I am away from keyboard, I enjoy hiking, rock climbing, surfing, and playing chess.</p>		
EDUCATION	<div><div>Postdoctoral Researcher University of California, Santa Barbara, US</div><div>Doctor in Philosophy (PhD) Eurecom, France Thesis: Advances in Memory Forensics</div><div>MSc in Computer Science 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</div><div>Internship Eurecom, France</div><div>Erasmus Uppsala University, Sweden</div><div>BSc in Computer Science 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</div></div> <div><div>Jan 2020-Current</div><div>Jan 2016-Sept 2019</div><div>Feb 2013-Oct 2015</div><div>Feb 2015-May 2015</div><div>Jan 2014-Jun 2014</div><div>Sep 2009-Feb 2013</div></div>		
PUBLICATIONS	<div><div>[9] Fabio Pagani, Davide Balzarotti. AutoProfile: Towards Automated Profile Generation For Memory Analysis. ACM Transactions on Privacy and Security (TOPS) 25, no. 1 (2022)</div><div>[8] Robert McLaughlin, Fabio Pagani, Noah Spahn, Christopher Kruegel, Giovanni Vigna. Regulator: Dynamic Analysis To Detect ReDoS. In Proceedings of the 31st USENIX Security Symposium (USENIX Security 22)</div><div>[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</div></div>		

- [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

- [3] Distinguished Reviewer Award - DIMVA 2021
- [2] Volatility Plugin Contest 2019, 5th place
- [1] Black Hat Europe 2016 Student Scholarship

SERVICE

Workshop on Binary Analysis Research (BAR) 2021

Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA) 2021

Computers & Security (COSE)

TEACHING EXPERIENCE

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

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.