Davide Quarta, PhD

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Experience

Post-doctoral researcher
Eurecom
📅 Jun 2017 – Now
⚲ Antibes, FR

Working on reverse engineering, and Trusted Execution Environments.

Interim Engineering Intern
Qualcomm Inc.
📅 Nov 2017 – Jan 2018
⚲ San Diego, CA

Code Review, Incident Response, Reverse Engineering.

Temporary Research Assistant
Politecnico di Milano
📅 Oct 2013 – Nov. 2017
⚲ Milan, Italy

Main developer for andrototal.org.

Research Intern
SecLab, University of California Santa Barbara
📅 Oct 2016 – Apr 2017
⚲ Santa Barbara, CA

Internship sponsored under the H2020 project Protasis, as a Marie Skłodowska-Curie Research Fellow, I worked on TEEs and static analysis, played CTFs, and co-organized iCTF 2017.

Freelance Consulting
📅 Sep 2010 – Ongoing

I worked on different projects: teaching courses on security topics, PTs/VAs, development. Clients include The Needs, TRUEL IT and Secure Network.

Honors & Awards

Lance Stafford Larson Writing Award, grad. students
IEEE Computer Society
📅 Jan. 2018

Best computer-related student paper in terms of: technical content, writing skill, and presentation.

Outstanding Contribution in Reviewing
Computers & Security, Elsevier
📅 Nov. 2017

Top 10% of reviewers for number of completed reviews for a specific journal in two years.

About me

I love teaching and sharing knowledge, passionate about reverse engineering and vulnerability discovery. In my spare time I play CTFs, hunt bugs, and enjoy doing sports.

Languages

English ●●●●○

Italian ●●●●●

German ●○○○○

French ●○○○○

Education

Ph.D. in Information Technology
Politecnico di Milano
📅 Oct 2015 – Mar. 2018

Thesis title: "Embedded System Security: Attacks, Impacts & Defenses"

M.Sc. in Computer Engineering (software and digital systems)
Politecnico di Torino
📅 March 2011 – July 2013

Thesis title: Performance and security of Linux Containers in Embedded Systems

B.Sc. in Computer Engineering
Politecnico di Torino
📅 Sept 2007 – March 2011

Disclosures & CVEs

- CVE-2018-11615
- CVE-2018-8715
- CVE-2017-7653
- ABB-SI20107 (multiple bugs)
- ICSA-18-191-01

Publications

👥 Conference Proceedings

- De Nicolao, Pietro et al. (2018). "ELISA: ELiciting ISA of Raw Binaries for Fine-grained Code and Data Separation". In: International Conference on Detection of Intrusions and Malware, and Vulnerability Assessment. Springer.
- Quarta, Davide, Federico Salvioni, et al. (2018). "Extended Abstract: Toward Systematically Exploring Antivirus Engines". In: International Conference on Detection of Intrusions and Malware, and Vulnerability Assessment. Springer.
- Quarta, Davide, Marcello Pogliani, et al. (May 2017). "An Experimental Security Analysis of an Industrial Robot Controller". In: Proceedings of the 38th IEEE Symposium on Security and Privacy. San Jose, CA: ACM. URL: https://www.youtube.com/watch?v=tGcNefddfZM.

📄 Journal Articles

- Valdi, Andrea et al. (2015). "Scalable Testing of Mobile Antivirus Applications". In: Computer 48.11, pp. 60–68.

📄 Technical Conferences

- Maggi, Federico et al. (2017). Rogue Robots: Testing the Limits of an Industrial Robot's Security. Tech. rep.
- Marastoni, Niccolò et al. (2017). GroupDroid: Automatically Grouping Mobile Malware by Extracting Code Similarities. Tech. rep.

Teams & Activities

CTFs

I play CTFs (computer security competitions) with the Tower of Hanoi team from Politecnico di Milano. Team captain for Owasp AppSec EU 2106 CTF, where the team scored 2nd place. Played a few CTFs with UCSB' Shellphish, and developed challenges for both iCTF 2017 and 2018. Co-organized competitions like PoliCTF 2015 CTF and iCTF 2017, and developed tools: https://github.com/TowerofHanoi/CTFsubmitter. Memeber of the Mhackeroni team.

SunSlice – Communication Manager
Politecnico di Torino
📅 March 2013 – May 2013

SunSlice is a university team that partecipated to the Solar Decathlon Europe 2014 competition to design and prototype a sustainable home.

Presentations

I presented at both industry and academic conferences:
- Troopers 2018 (speaker&panelist)
- BlackHat USA 2017
- IEEE S&P 2017
- HEK.SI 2016

Review experience

- Shadow PC IEEE S&P – 2018
- Computers&Security (Elsevier) – 2017, 2018
- CyberICPS – 2017
- WISTP – 2015, 2017
- EuroSec – 2015
- ICISS – 2014, 2015, 2016

Skills

Extensive experience with:

`Python` `ASM` `C` `.NET`
`VHDL` `Javascript` `SQL`
`Embedded Systems` `MongoDB`
`Malware Analysis` `Windows`
`Reverse Engineering` `z80`
`x86/64` `ARM` `Kernel coding`
`TrustZone` `BSD` `Linux`