

Xavier Maso

security, software, and cryptography engineer

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www.xaviermaso.com

Skills

Security

| | | | | |
|-----------|---------------------|--------------|------------|-------------------------|
| Scripting | Reverse Engineering | Exploitation | Pentesting | Code and Design Reviews |
| ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ |

Software development

| | | | | |
|-------------------------|-------|----------|-----------------|-------|
| Python / Ruby | Bash | C / Rust | ASM x86 | Java |
| ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ |
| Javascript / Typescript | Nix | Elm-Lang | Haskell / OCaml | Latex |
| ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ |

Systems administration

Linux: NixOS, Ubuntu, Debian, Raspbian, Fedora.

Configuration as code, automation: NixOps, Docker, Ansible, Travis, GitHub actions.

Soft skills

Team management: implement the environment which allows to develop the products and achieve goals.

Used to Agile methodology, especially Scrum, and Lean approaches. Pair, and mob programming. TDD practice.

Speaker: animation and presentation about a product, a project or to share experiences.

Interpersonal: listening and understanding individuals to facilitate interactions within a group.

Professional experience

Oracle NetSuite

Senior Application Security Engineer

November 2021 – Today

Remote

The Product Security Team assists product and engineering teams during the software development lifecycle of NetSuite.

- Collaborate on security design, implement security controls, and conduct code reviews.
- Build and manage tools (libraries, programs, processes, etc.) to help prevent and identify issues.
- Produce and deliver educational security material for engineers and product teams.

Tweag

Open Source Fellow

May 2021 – September 2021

Remote

Tweag is a French software innovation lab running a fellowship program for those eager to contribute to open source projects.

- Work on fuzzing nix, the declarative package manager.
- Target definition and prioritization; Write fuzzers; Explore using sanitizers; Run small experimental fuzzing sessions.

- Integrate to OSS-fuzz.

Arizona State University (ASU)

Research apprenticeship on binary analysis

April 2019 – September 2021

Phoenix, United States of America

ASU's Security Engineering for Future Computing (SEFCOM) laboratory is a world-class cybersecurity research lab carrying out cutting-edge academic research.

- Design, implement, and evaluate a new, fast static binary analysis technique.
- Study state-of-the art: symbolic and concolic execution, fuzzing, automated exploit generation.
- Contribute to angr, the open-source binary analysis framework.
- Guest lecturer for CSE545 Software Security (Fall 2020): presentation, and live examples on using angr to implement a static binary analysis technique.
- Research on privacy: co-author of "Unleash the Simulacrum: Shifting Browser Realities for Robust Extension-Fingerprinting Prevention".

Mozilla Corporation

Web security intern, Scanning modern web applications with OWASP ZAP

May 2018 – August 2018

London, United Kingdom

The Firefox Operations Security team protects the core services and release engineering infrastructures Mozilla relies on to build, ship and run Firefox.

OWASP ZAP is a free and open-sourced security tools to help automatically find security vulnerabilities in web applications.

- Research and development in Javascript and the DOM API: keep track of events and interactions happening in a webpage. Released the @zapproxy/front-end-tracker library on npm.
- Development of a ZAP add-on to create a framework for pentesters to run security scripts directly in the browser.
- Research on modern web applications (Single Page Applications) vulnerabilities.
- Part of a distributed team and contributing to an open-source community.

Orange Application for Business

System administrator, Securing workstations

June 2017 – August 2017

Bordeaux, France

OAB is a subsidiary of Orange S.A developing and hosting services for businesses.

Integrated to an operations team of four, my mission was to secure their Linux workstations.

- System administration: Arch, Ubuntu, Debian.
- Define and apply good security practices for laptops and mobile devices.
- Development: ansible roles, audit-ssh-client-config script.
- Research: securing the boot process (anti-evil maid), NixOS, Public Key Infrastructures.
- Training and communication about the security practices: write documentation, create tutorials, run workshops.

RedShield Security Ltd

Software engineer

January 2015 – April 2016

Wellington, New Zealand

Shielding-with-a-service company providing a web application firewall, vulnerability scanner and analyzer to assist IT departments ensure the security of their systems.

- Development in Ruby and Javascript; Debugging, and automate testing.
- Configuration of production and CI servers (Jenkins).
- Security: offensive, secure development, incident response.

CER SNCF

Full-stack developer

June 2012 – Oct 2014

Bordeaux, France

Distributed all over the Aquitaine and Poitou Charentes French regions, the CER (for Committee of Regionnal Establishment) provides services to SNCF's workers.

Missions

- Web development, information system administration and maintenance, automation.
- IT service management: needs analysis; goals, processes, and tasks definition; listing of skills and resources to prioritize our work.
- Help in recruitment for IT service: define required skills, and mission scopes; Interview candidates.

Project, subject of my master thesis

- Build a website dedicated to SNCF's employees: tasks and planning definition, resources and skills affectation to provide this new service within six months with a three person team.
- Communication and product launching: define and reach targets, follow the adoption and usage of the product.
- Integration within the existing information system: shared databases services, web server deployment.
- Server on Ubuntu 14.04, database is PostgreSQL, Nginx and Unicorn as web stack.
- Application built with Ruby-On-Rails, Slim, SASS and CoffeeScript. RSpec and Capybara for testing and QA.

Education

University of Bordeaux

College of Sciences and Technologies

2016 – 2019

Bordeaux, France

- One year of refresher training in Mathematics.
- Master of Mathematics and Applications: Cryptology and IT Security.

Ingésup (www.ingesup.com)

Information System Expert

2009 – 2014

Bordeaux, France

Master of computer information technologies (speciality in Development) equivalent.

- Member of the security lab: research and learning about exploitation and penetration testing.
- Member of the games lab: participation in video game development contests.

Lycée La Boétie, Academy of Bordeaux

2005 – 2009

French Baccalauréat in Sciences (speciality in Mathematics), with honors.

Non-professional activities

Secretary of Okiwi

non-profit

2023 – Today

Okiwi is an open community of software craftsmanship practitioners, from Bordeaux. It advocates for benevolence, inclusion, sharing, openness, and diversity.

Personal dedicated servers

server administration

2014 – Today

Co-owner of dedicated servers, used to manage self-hosted services such as Selfoss, Cryptpad, Grafana, Wireguard etc. as well as diverse websites.

- NixOS systems for reproducibility and automation, deployed with nixops.

- Debian systems, using Ansible for reproducibility and automation, and Docker containers for modularity and isolation.

xaviermaso.com

2015 – Today

web development

My personal website. Front-end written in Elm, back-end powered by ExpressJS.

Sources on Github: github.com/Pamplemousse/xaviermaso.com .

DjangoGirls Bordeaux

2016 – 2019

non-profit

Non-profit community that empowers and helps women get involved with programming. Organization and coaching for DjangoGirls events, and recurring meetups. Teaching programming basics using Python.

Hobbies

Challenges

root-me, HackTheBox
exercism

Reading

sciences, economy, politics,
psychology, and sociology

Sports

muay thai, diving (PADI AOW)
former judoka, football and handball player