

Xavier Maso

security, software, and cryptography engineer

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www.xaviermaso.com

Skills

Security

Scripting	Reverse Engineering	Exploitation	Pentesting
★★★★★	★★★★★	★★★★★	★★★★★

Software development

Languages

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

Libraries / Frameworks: Ruby-On-Rails, Django, ExpressJS, Flask, jQuery, Angular, Vue.

Systems administration

Linux: NixOS, Ubuntu, Debian, Raspbian.

Continuous integration: Ansible, Docker, Jenkins, Travis, Capistrano.

Databases: MySQL, PostgreSQL, Redis and MongoDB.

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

Arizona State University (ASU)

Research apprenticeship on binary analysis

April 2019 – Today

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.

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 Mathematics and Applications: Cryptology and IT Security.

Ingésup (www.ingesup.com)

Information System Expert

2009 – 2014

Bordeaux, France

- Five year of university studies in computer information technologies (speciality in Development).
- 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.

Projects

Personal dedicated servers

server administration

2014 – Today

Co-owner of dedicated servers, used to manage self-hosted services such as Gogits, NextCloud, Selfoss, etc. as well as diverse websites. Running on Debian systems, using Ansible for reproducibility and automation, and Docker containers for modularity and isolation.

xaviermaso.com

web development

2015 – Today

My personal website. Front-end written in Elm, back-end powered by ExpressJS.
Sources on Github: github.com/Pamplermousse/xaviermaso.com .

DjangoGirls Bordeaux

non-profit

2016 – 2019

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.

There are more: abandonned projects, dirty hacks that I am not proud of anymore... Have a look on my website: xaviermaso.com/projects .

Hobbies

Challenges

microcorruption, root-me
HackTheBox

Reading

sciences, economy, politics,
psychology, and sociology

Sports

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