

# Xavier Maso

## software, security, and cryptography engineer

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## Skills

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### Software development

#### Languages



#### Libraries / frameworks

Ruby-On-Rails | Django | ExpressJS | Flask | Angular | Vue | jQuery

### Systems administration

- Linux: NixOS, Ubuntu, Debian, Raspbian.
- Continuous integration: Ansible, Docker, Jenkins, Travis, Capistrano.
- Web technologies: Nginx, Unicorn, Apache2.
- 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 approach. Pair programming and 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.
- Marketing: around and through a product and / or company to communicate values.

## Professional experience

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### Arizona State University (ASU)

*Research apprenticeship on binary analysis*

*April 2019 – Today*

*Tempe, 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.

- Creating and evaluating a new, faster technique for static binary analysis, targeting IoT devices softwares.
- Study state-of-the art: symbolic and concolic execution, fuzzing, automated exploit generation.
- Contribute to angr, the open-source binary analysis framework.

### 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**

*June 2017 – August 2017*

*System administrator, Securing workstations*

*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**

*January 2015 – April 2016*

*Software engineer*

*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.
- Configuration of production and CI servers (Jenkins).
- Debugging, automated testing.
- Research and development.
- Security: offensive, secure development, incident response.

### **CER SNCF**

*June 2012 – Oct 2014*

*Full-stack developer*

*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.

#### **First missions**

- Web development in PHP with the Zend framework.
- Production environment management: Nginx front-end with FCGI, PostgreSQL production database.
- Team work with Git and automated deployment on top of this VCS tool.
- Adaptation of our tool for another CER: needs analysis, objectives definition, integration to our development and deployment processes and tooling.

#### **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 month with a three person team.
- The application can be found at [cheminot.cer-sncf-bx.org](http://cheminot.cer-sncf-bx.org) .
- 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.
- Quality management by software testing using Rspec and Capybara.
- Git and Capistrano for code management and automated deployment.
- Back-end written in Ruby-On-Rails. Front-end used Slim, SASS and CoffeeScript.
- Server on Ubuntu 14.04, database is PostgreSQL, Nginx and Unicorn as web stack.

#### **Others**

- Information system maintenance: Zimbra mail, Windows2008 domain, Debian web servers and support.

- IT service management: needs analysis, tasks definition, listing of skills and resources to prioritize our work.
- Help in recruitment for IT service: define required skills, job scope ; participate during interviews.

### Cabinet P.PI/4

*Web developer intern*

*Summer 2011  
Bordeaux, France*

- Web development in PHP with the CodeIgniter framework.
- Seven students team organized with the Scrum method.
- Interviews with client for needs analysis.

## Education

### University of Bordeaux

*College of Sciences and Technologies*

*2016 – 2019  
Bordeaux, France*

- Master Mathematics and Applications: Cryptology and IT Security.
- Refresher training in Mathematics.

### Ingésup (www.ingesup.com)

*Information System Expert*

*2009 – 2014  
Bordeaux, France*

- Five year of university studies in computer information technologies (specialty 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

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

*2005 – 2009*

## Projects

### Personal dedicated server

*server administration*

*2014 – Today*

- Co-owner of a dedicated server, used to manage personal services such as Gogits, Owncloud, Selfoss, Etherpad, Wallabag and websites.
- Running on Debian systems, using Ansible for 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](https://github.com/Pamplermousse/xaviermaso.com) .

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

## Hobbies

### Reading

sciences, economy, politics,  
psychology, and sociology

### Challenges

microcorruption, root-me  
w3challs

### Sports

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