

Alexandre Doyen | PhD student in cybersecurity

📞 +33 6 43 95 54 03 • ✉ alex.doyen20042000@gmail.com
🌐 <https://alexandredoyen29.github.io/en>

Career objectives

As I am ending my PhD degree (Backdoors detection in network protocols implementations), I am looking for a research and development position in cybersecurity of systems and networks.

Work experience

CEA List

Palaiseau – France

Research engineer / PhD student

2023 – Now

PhD in the Binsec team on research and detection of software backdoors in network protocols implementations

Main tasks :

- Develop and test a suitable detection technique with a modeling step and fuzzing (*C, C++ and OCaml languages*)
- Build a relevant benchmark to evaluate the developed technique

Learnings:

- State-of-the-art about backdoors detection and fuzzing
- Autonomously project management for three years
- Dynamic analysis
- English writing of scientific communications

Key achievements:

- The developed technique achieved a **0 false positives (100% of precision rate)** detection contrary to the state-of-the-art by leveraging a **model**
- **Paper under review** in a peer-reviewed cybersecurity conference

University of Zürich

Zürich – Switzerland

Research internship on Apple AirTags' security

2022

Research internship based on the reverse-engineering of the Apple AirTags (Object trackers based on Bluetooth Low Energy) to prevent malicious usages (Spying, etc.).

Main tasks :

- Study and analyze the BLE protocol
- Conduct a reverse-engineering campaign of proprietary network protocols

Key achievements:

- Apple AirTag spoofing
- Development of a technique to detect BLE trackers in the environment (*C and C++ languages*)

Centre de Météorologie Spatiale – Météo-France

Lannion – France

Apprenticeship in systems and networking administration

2019 – 2023

Main tasks:

- Build High Performance Computing (HPC) systems by using Slurm and Lustre under an High Availability constraint
- Secure a database against hazard, and statistical study on potential strategies to tackle it (*PostgreSQL + repmgr*)

Learnings:

- Team working and project management
- Administration and engineering of systems and networks (*RHEL environment + Debian/ProxMox*)
- System programming under Linux (*C language*)
- HPC systems design

Education

Loria – Université de Lorraine

Nancy – France

PhD in computer science, PhD degree

2023 – Now

3-years research work on backdoors detections in network protocols implementations

ENSSAT – Université de Rennes 1

Lannion – France

Engineering degree by apprenticeship in computer science, Master degree

2020 – 2023

Knowledge in computer science, embedded systems, system and low-level programming, maths

Competences

Programming languages: C, C++, OCaml, Rust, Python **Tools:** Linux, \LaTeX , Git, VSCodium, AFL++

Soft skills: Autonomous project management

Languages

French: Native

English: Certified B2 level (TOEIC score of 855 / 990 obtained in 2023)