

# Adrien Cosson

## Software Engineer

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## Professional and Academic Experience

### elmy - Fullstack Software Engineer

SEP 2023 - CURRENT

- Led the implementation of multiple business-critical features for a B2C acquisition funnel, including a Stripe-based payment system and multiple front-end variants of the customer funnel, using NodeJS, Typescript, and React.
- Improved the developer experience of several projects, by installing and configuring tools such as Biome, Vitest, Kanel, Lefthook, and Storybook, and replacing libraries with modern alternatives (Day.js, Kysely, Zod).
- Configured and optimized the infrastructure of some web applications using Terraform and Kubernetes.
- Streamlined the testing and CI experience by refactoring Dockerfiles and leveraging Testcontainers, leading to ~30% faster Jenkins pipelines and smoother local test execution.
- Created and taught an internal developer-oriented Docker training course, from the basics of what are layers, images, and containers, up to multi-stage builds and non-root user images.
- Addressed technical debt across multiple projects, by refactoring legacy codebases, updating severely outdated dependencies, eliminating dead code, and setting up Renovate for continuous updates.

### Rtone IoT Makers - Embedded Software Engineer

JAN 2021 - MAY 2023

- Developed and deployed Docker-based Azure IoT modules written in Python (using FastAPI, Flask, and Pytest).
- Designed CI/CD pipelines on Azure DevOps and Gitlab CI to automate the development of these modules.
- Created a bespoke Yocto-based embedded Linux OS, and deployed it on a fleet of 18,000+ devices.
- Built automated monitoring tools to oversee, diagnose, and repair tens of thousands of devices at once.
- Improved the reliability of Rtone's internal infrastructure using Ansible, by setting up periodic server backups, configuring a hardened reverse-SSH bastion, or installing a linting CI pipeline.
- Implemented some best practices for Python programming, by developing and maintaining a standardized template that provides sane default configuration for multiple tools (for linting, testing, formatting, etc.).

### SIIS Lab (Systems and Internet Infrastructure Security) - Research Assistant

AUG 2018 - AUG 2020

- Investigated a new intrusion detection framework for IoT network and embedded environments, in the SIIS Lab under the advising of [Pr. Patrick McDaniel](#).
- Designed [Watchtower](#), a monitoring tool aimed at aggregating low-level OS information of IoT devices.
- Implemented [Sentinel](#), a Linux Kernel Module exposing the hardware information used by Watchtower.

### Pennsylvania State University - Teaching Assistant

JAN 2019 - AUG 2019

- Created and graded assignments and exams for 200+ student courses, along with 3 other TAs.
- Gave multiple hour-long lectures on Operating Systems and Systems Programming topics.
- Held in-person biweekly office hours to help students work through their assignments.

## Education

**Pennsylvania State University, USA** - M.S. in Computer Science. **GPA 3.85 / 4.00** | AUG 2018 - AUG 2020

**Australian National University, Canberra, Australia** - Exchange semester. | JAN 2018 - MAY 2018

**École Centrale de Lyon, France** - B.S. in Engineering. **GPA 3.90 / 4.00** | SEP 2015 - AUG 2020

## Skills

### Programming Languages

TYPESCRIPT | PYTHON  
C | C++ | RUST

### Technologies

DOCKER | CI/CD | KUBERNETES | GCP  
NODEJS | GITHUB ACTIONS | SONARQUBE

### Languages

FRENCH  
ENGLISH