

# Paul Florence



BACK-END ENGINEER · DEVOPS

Toulouse, France

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Backend software engineer with expertise in Django, PostgreSQL, DevOps, and data modeling. Experienced in scaling web applications and optimizing performance with a background in cybersecurity and hands-on hardware experience.

I have worked across multiple aspects of software engineering: development, team leadership, DevOps, UX design, architecture, and system administration.

I am seeking a technically challenging environment that supports a diverse range of tasks.

## Experience

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### Back-end Engineer and DevOps

Toulouse

SOFTWARE ENGINEER, [MAKINA CORPUS](#)

2021-now

- Back-end development using Django within a **small team**, with a focus on projects with 'big' data and highly complex user domains. My tasks ranged from **python/django development** to **UX** along as some **DevOps** tasks.
  - [OutdoorVision](#): a GIS web app used to visualize how athletes use the outdoors
    - **scale an aggregation algorithm x60** (M3) implementation : we went from 500k GPS tracks to 30M tracks
    - work as **team lead** : design new features with the client and **organize the work** of the team
    - benchmark web performance using **Gatling**
  - BDClimatS: a database for all the climate data produced by France national climate lab (Météo France) :
    - animate UX workshops with the users to **design the data architecture**
    - **benchmark** the tech stack : ETL/ELT software, data storage formats and summarize the trade-offs
    - implementation of a versioned API using django & drf, apache airflow DAGs for data ingestion and user management using Keycloak (single-sign-on)
    - **build tooling** around the system : generate and publish a **SDK** from the OpenAPI specification as well as a toolkit built on top of the SDK.
  - MoniQua: a web service to validate daily ocean weather forecast
    - analyze and rework SQL queries to solve **performance issues** : from HTTP timeouts to subsecond response time
    - complete **re-design of the data model**, going to something more hybrid with a bit of 'no-sql'
    - implement **end-to-end testing** in the continuous integration pipeline using Cypress
    - design and implement new features with the client
    - **prevent performance issues** with query count analysis
- **Testing, building, packaging and deploying** web applications using **Gitlab CI** and **Docker**
  - refactor and mutualize **continuous integration pipelines** across Python projects
  - keep project dependencies up to date : from database upgrades (**postgresql**) to python dependencies
  - implement continuous deployment pipelines using **Ansible**
- **Teach** python and django classes to adult students during **professional training**
- Assist system administrators
  - write custom Ansible roles to deploy some tooling
  - emergency support in case of a major issue within our infrastructure
- [Built a django application](#) to authenticate users using the OpenID Connect protocol (OIDC)
- Mentor interns and newcomers, review code
- Technical writing [for the company blog](#)
- Host bi-monthly team meeting to share technical news to my colleagues

### Research Engineer

Toulouse

RESEARCH ENGINEER, [LAAS-CNRS](#)

Sept. 2020 - March 2021

- Implementing a Linux device driver for custom hardware.

- Porting an FPGA implementation to a new board.
- Summarizing and reading state of the art research in the field of hardware/software side channels attacks and defenses.
- Proposing areas of research that could lead to valuable results.

## Internship

Cambridge, UK

PRODUCT INTERN, [ARM LTD](#)

June 2019 - Sept. 2019

- Designing and developing a plugin system for a GPU driver.

## Notable projects

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### Multiple open source contributions

[GITHUB PROFILE](#)

2018-2025

- python : [django\\_pyoidc](#)
- rust : [martin tile server](#), [clippy](#), [serialport-rs](#), [stm32-rs](#) or [gtk-rs](#)

### Sentry tunnel

[HTTPS://WWW.GITHUB.COM/GBIP/SENTRY\\_TUNNEL](https://www.github.com/gbip/sentry_tunnel)

2021

A microservice for securely proxying error monitoring data to Sentry.

### Bare metal control library for servo-motors

[HTTPS://WWW.GITHUB.COM/GBIP/DRS\\_0X01\\_DRIVER](https://www.github.com/gbip/drs_0x01_driver)

2019-2020

A library that implements a communication protocol used to control servomotors for **robotics**.

## Skills

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**Languages** Python, Rust, Shell, Makefiles, C++

**Tools** Linux, Ansible, Docker, Gitlab CI, Pypi, Git, Containers

**Web skills** Django, Django REST Framework, PostgreSQL, Apache Airflow, Object Storage (S3), Gatling

**Authentication** Keycloak, OpenID Connect (OIDC)

**Spoken** French, English

**Languages**

## Education

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### Master degree in computer science & engineering

INSA of Toulouse

CYBERSECURITY AND COMPUTER ENGINEERING

2015 - 2020

### Degree in information security

University of Toulouse

MANAGING COMPUTER SYSTEM TO ENSURE THEIR SECURITY

2020