



Hugo Folcher

Software Engineer

Passionate about science and technology, my education and professional experience have made me rigorous, efficient, and versatile.



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hugo-folcher



hufolcher



Boulogne-Billancourt (92100)

PROFESSIONAL EXPERIENCE



FULLSTACK SOFTWARE ENGINEER

FULL-TIME | CUREETY | APRIL 2025 - PRESENT

Front-end

Cureety is a SaaS platform for oncology telemonitoring: patients regularly complete questionnaires based on their pathology/treatment, allowing their clinical status to be monitored automatically. Health care professionals have access to a dedicated web application to follow and manage patients.

- Development of new interfaces and features & progressive migration of existing ones to unified Flutter-based applications (mobile Android & iOS, health care professionals web application, patient web application, and back-office).
- Maintenance and evolution of existing React/NextJS web interfaces (health care professionals dashboard and back-office).

Stack: Dart/Flutter/Riverpod, JavaScript/TypeScript/React, Jenkins, GitLab

Back-end

Cureety is experiencing rapid growth and must evolve its backend services to scale reliably without service interruption.

- Progressive migration (endpoint by endpoint) of existing backends to Rust in order to improve performance, reliability, and maintainability.
- Database schema and query optimization in PostgreSQL.
- End-to-end testing of new Rust services with simulation of external service dependencies.
- Maintenance of existing LoopbackJS backends.

Stack: Rust/ActixWeb/Sqlx, PostgreSQL, REST API, JavaScript/TypeScript, NodeJS, LoopbackJS, Docker, Jenkins, GitLab



R&D SYSTEM ENGINEER / SOFTWARE DEVELOPMENT

FULL-TIME | SAFRAN ELECTRONICS & DEFENSE | MARCH 2023 - APRIL 2025

High-accuracy Time & Frequency System for Naval Group

A high-precision autonomous timekeeping system capable of distributing timing signals in various electrical and digital formats within a constrained embedded environment comprising custom electronics, FPGA, and embedded software.

- High-level system design (business logic, synchronization and control mechanisms).
- Embedded C development on Linux (task scheduling, FPGA and custom electronic boards control, secure TCP/IP with SSL, PostgreSQL storage, serial UART communication).
- Complex desktop UI for system interaction using Python Qt on Linux (secure TCP/IP, PostgreSQL backend, operational interfaces).
- Full system simulation (physical clock behavior, signal interactions, timing models) using Python Qt for training, verification and automated testing.
- UI/UX design in collaboration with the final customer.
- Technical leadership on the software part of the project, customer communication and design reviews.
- Automatic generation of technical reports/documentation using Typst.

Stack: C, Python, PyQt/PySide, PostgreSQL, Docker, GitLab

Maintenance of Legacy Time & Frequency System for Naval Group

Sustaining and troubleshooting the previous generation of the subsystem. Due to several years without intervention, significant reverse engineering was required.

- Embedded C on Linux (code review, bug diagnosis, stability improvements).
- Development of a full simulation environment (electronics + FPGA behavior + UART + interface) primarily in Python to validate firmware updates.

Stack: C, Python, PyQt/PySide, VirtualBox, GitLab

R&D SOFTWARE ENGINEER FULL-TIME | OROLIA 2S (NOW SAFRAN TRUSTED 4D) | JANUARY 2022 - MARCH 2023

Atomic-reference Time Card (ARTCARD)

Co-developed in open-source with Meta, ARTCARD integrates an FPGA, a GNSS receiver (Ublox), and a miniature atomic clock (MRO50) for datacenter synchronization.

- GNSS disciplined-oscillator control software in C, open-source development & support (<https://github.com/Orolia2s/oscillatord>).
- Manufacturing programming bench (FTDI, FPGA, EEPROM flashing), testing workflows & operator-facing UI for production.
- Contributions to the open-source Linux driver integrated into the kernel (<https://github.com/Time-Appliances-Project/Time-Card>).
- Prototype experimentation & fast iteration via internal driver modifications.

Stack: C, Python, PyQt/PySide

Critical-application GNSS Simulation Software (Skydel)

Development of GNSS signal modification simulation for drone spoofing defense applications.

- Extension of a civilian GNSS simulation software for defense-grade usage (C++17, Qt, cryptography).
- Backend service in C++ exposing system functionalities to control and monitoring interfaces.
- Customer demonstrations, system integration and field testing.

Stack: C++17, C++20, Qt, GitLab

Resilient Navigation System (NavKite)

Prototype combining inertial navigation with spoofing-detector GNSS receiver, later industrialized as a defense product.

- Backend development & integration with embedded navigation systems (Python), GNSS security logic, web API exposure.
- Rapid prototyping then continuous improvement cycles.
- On-site demonstrations for armed forces / defense clients.
- Industrialization including Buildroot-based custom Linux OS packaging.

Stack: Python/Gunicorn/Socketio, React, Docker, Buildroot

EDUCATION



ÉCOLE NATIONALE SUPÉRIEURE DES MINES DE SAINT-ÉTIENNE 2018 - 2021



Campus Georges Charpak Provence - Gardanne, 13120,

- ISMIN Engineering Program (Microelectronics & Computer Science)
- Specialization in Microchip Design
- Technology Focus: Information Technologies & Supply Chain

CLASSE PRÉPARATOIRE AUX GRANDES ÉCOLES (MPSI-MP*) 2015 - 2018

Lycée Montaigne - Bordeaux, 33000,

- MPSI-MP* - Computer Science Option / 2015 - 2017

Lycée Godefroy de Bouillon - Clermont-Ferrand, 63000,

- MP - Computer Science Option / 2017 - 2018

SCIENTIFIC BACCALAUREATE WITH HIGH HONORS 2015

Lycée Charles Gide - Uzès, 30700,



SKILLS

Languages: Python, C, Rust, C++, SQL, Dart, JavaScript, TypeScript, Bash

Frameworks / Tools: UNIX Systems, POSIX Commands, Git, GitLab, GitHub, Bitbucket, Wireshark, VirtualBox, Nix Package Manager, Qt (C++), PySide / PyQt, PostgreSQL, Sqlx, ActixWeb, Buildroot, Flutter, Riverpod, React, Docker, Podman, Grafana, SQLAlchemy, Typst, Jenkins, Uv, Valgrind, GDB, Yocto, OpenGL



LANGUAGES

FRENCH (Native)

ENGLISH (Professional)

SPANISH (Conversational)