

Jacques Rimbault

Senior Backend & Platform Engineer

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Professional Summary

Backend and platform engineer with 8+ years of experience building reliable internal systems, developer infrastructure, and performance-sensitive software across cybersecurity, banking, energy, and government. Owns systems end to end, from architecture and implementation through deployment, observability, and operations. Strong in Rust and Python, with particular depth in embedded CI/CD, hardware-in-the-loop testing, remote lab orchestration, Linux systems, Docker, and GitLab CI/CD.

Core Expertise

Rust | Python | Backend systems | Developer infrastructure | Embedded CI/CD and HIL | Linux systems | Docker | GitLab CI/CD | Infrastructure automation | Performance engineering

Professional Experience

R&D Engineer - Backend, Platform & Embedded CI | ProvenRun

Mar 2024 - Present | Paris, France

- Designed, built, and operate Board on Demand, a remote hardware lab giving engineers and CI pipelines shared, on-demand access to embedded targets they never have to touch physically; sole author of a 21-crate, 78k-line Rust workspace across two years.
- Built its backend and command-line clients: SQLite-backed booking scheduler with overlap constraints, REST/OpenAPI interfaces, SSH key lifecycle and API-key authentication, and an event-sourced booking history.
- Automated the physical layer behind a single command line: networked power distribution units, SD-card multiplexers, serial consoles, and image delivery over SFTP.
- Wired the lab into GitLab CI so pipelines book, flash, and release real hardware unattended, with automatic booking extension, timeout power-off, cleanup, and notifications.
- Built the TypeScript web frontend for lab status, live board views, and user administration, with its own Vite build, lint and type-check gates, and a 300-test Vitest suite at 98% line coverage.
- Keep the platform verifiable: 1,400+ Rust tests holding 88% line coverage at the latest release, plus a black-box integration suite that exercises the shipped release binaries.
- Own release and supply-chain engineering for the platform: license and SBOM checks, vulnerability scanning, glibc-compatibility verification, generated changelogs, and published mdbuf documentation.
- Operate isolated lab services including Docker runners, proxying, DHCP/DNS/NTP, camera streaming, and Yocto/Buildroot/Pytest build and test workflows.
- Define Rust and Python development policies, Docker environment standards, GitLab CI/CD guidelines, and observability practices.

Technologies: Rust, Python, TypeScript, Actix Web, SQLite, GitLab CI/CD, Docker, Linux, Yocto, Buildroot, Pytest, Vite, Hardware-in-the-Loop, Developer Tooling, OpenAPI, SSH, Networking, Supply-Chain Security, Observability

Software Engineer (Consultant) | ORNESS

Feb 2021 - Feb 2024 | Paris, France

- For Société Générale SGCIB, developed internal cloud APIs enabling engineering teams to operate private-cloud infrastructure.
- Improved critical unit-test coverage and produced user documentation and technical support for internal users.
- For Engie, built tooling for network and security administrators, including firewall-log filtering and streamlined firewall-rule management.

Technologies: Python, TypeScript, Node.js, Web Components, AWS Lambda, Jenkins, GitHub, Jira, Cloud APIs, Security Tooling

Software Engineer | Société Générale SGCIB

Sep 2018 - Dec 2019 | Paris, France

- Profiled and optimized the Liquor financial software, reducing its memory footprint by 32 GB through targeted CPU and memory analysis.
- Built internal OWIN HTTP and SignalR WebSocket APIs for monitoring and controlled dataset execution.
- Redesigned continuous-integration scripts to shorten commit-to-feedback time.

Technologies: C#, .NET, .NET Core, TypeScript, Windows Server, Microsoft SQL Server, TeamCity, Performance Profiling, SignalR, OWIN

Software Engineer | Ministère de l'Intérieur

Jul 2016 - Jun 2018 | France

- Developed and maintained an intranet web application.
- Led the migration from PHP 5.4 to 5.6 and initiated the transition to PHP 7.
- Helped deploy internal GitLab and Jenkins services, standardized Git workflows, introduced unit and integration testing, and mentored an apprentice developer.

Technologies: PHP, JavaScript, MySQL, GitLab, Jenkins, Unit Testing, Integration Testing, Mentoring

Projects

YADF - Yet Another Dupes Finder | github.com/jRimbault/yadf

Creator and maintainer of a high-performance duplicate-file finder for modern SSD-based systems, built in Rust.

- Designed around parallel filesystem traversal, cache-aware data structures, and multiple non-cryptographic hashing algorithms.
- Published reproducible benchmark scripts comparing warm- and cold-cache performance against established tools.

Selected Open-Source Contributions

Contributions across the Rust, Python CLI, Fedora CoreOS, and Online-Go ecosystems.

- Fedora CoreOS openssh-keys: preserved SSH public-key comments and added no_std support.
- Tyro: added a reusable Verbosity type for mutually exclusive -v/-q count flags and Python logging-level mapping.
- Starship: improved startup performance, avoided double compilation, and fixed shell-aware parsing of editor commands and arguments.
- Sysinfo: improved storage-device naming.
- Textwrap: ported Python-compatible unit tests and fixed indentation to preserve existing newlines.
- Bytesize: implemented FromStr for human-readable byte sizes, enabling direct use in Rust CLI parsers.
- Highway-rs: implemented the standard Hasher and Write traits for HighwayHash implementations without changing the public API.
- xh: eliminated repeated request-item regular-expression compilation.
- rand_regex: added a CLI example and parallel, stable, and minimum-supported-Rust-version CI coverage.
- Goyave: parallelized independent continuous-integration jobs.
- fclones: simplified path conversions by removing redundant implementations.
- Online-Go.com: persisted analysis variations locally so game reviews survive reconnects.

Technical Skills

Languages: Rust, Python, TypeScript, C#, Bash, JavaScript

Backend & Systems: REST APIs, OpenAPI, Actix Web, SQLite, Scheduling and Orchestration, SSH, Networking, Performance Profiling, Observability

Platform & Embedded: Linux, Docker, GitLab CI/CD, GitHub, Jenkins, Kubernetes, AWS, Yocto, Buildroot, Hardware-in-the-Loop, Remote Hardware Labs, SonarQube

Engineering Practices: Developer Tooling, Developer Experience, Test Automation, Unit Testing, Integration Testing, TDD, Technical Standards, Mentoring

Education

Bachelor's Degree in Software Architecture - ESGI - École Supérieure de Génie Informatique

Languages

French: Native | English: Fluent - TOEIC 990/990