

# Gregory Roussac

Senior Software Engineer | Rust Backend, Angular Frontend & Distributed Systems

+31 6 20 80 84 54 | Hilversum, NL | [gregory@interchouette.net](mailto:gregory@interchouette.net) | [linkedin.com/in/gregoryroussac](https://www.linkedin.com/in/gregoryroussac)

## PROFESSIONAL SUMMARY

Senior Software Engineer with 20+ years of experience building full stack applications, distributed systems, APIs, and developer tooling. Recent focus on Rust-based services, APIs, SDKs, and high-performance systems deployed on VPS and AWS using Docker. Experience includes blockchain infrastructure, event-driven architectures, cryptographic key management, transaction processing, and microservices backend development.

Earlier experience includes Angular frontends, PHP e-commerce platforms, and full-stack software delivery.

Open to freelance and contract engagements in Rust backend engineering. Based in the Netherlands, available for both local and remote opportunities.

## AREAS OF EXPERTISE

- Rust Async (Tokio, Axum, Actix)
- System Design, Distributed Systems
- REST APIs, Microservices
- PostgreSQL, SQLx
- Event-Driven Architectures
- AWS, SQS, LocalStack
- Linux, Docker, CI/CD, GitHub Actions
- On-chain AI Agent Registries
- Rust MCP servers for LLM agents
- SDK Development, WASM
- Smart Contracts (Rust, Solidity)
- Blockchain Dev (Anchor, Casper, CosmWasm)
- Cryptography (KMS, digital signatures)
- Angular, TypeScript
- Node.js, NestJS
- PHP, PrestaShop, Symfony
- Python, Django
- Cypress, Jest, Electron

## PROFESSIONAL EXPERIENCE

### Senior Rust/WASM Software Engineer | Nov 2022 – Present Interchouette (ITC), Hilversum, NL - Freelance contractor (ZZP)

Freelance software engineer focused on **Rust** backend systems, distributed architectures, SDK development and blockchain infrastructure. Recent engagements include Casper Labs, Casper Association and confidential enterprise platforms under NDA.

- **Enterprise Systems**
  - High-performance **Rust** backend systems for APIs, microservices, transaction processing using **Actix** and **Axum** (REST APIs), **SeaORM**, **Straddle**, and **AWS** SQS/S3 event-driven Rust workers
  - Multi-service **Docker** Compose environments, pre-production infrastructure, and Nx monorepo integration (**Angular**, **NestJS**)
- **Backend Systems & Distributed Architecture**
  - **PostgreSQL** backends (SQLx, SeaORM) with event-driven architectures and **AWS** SQS messaging
  - Design and maintenance of **Docker**-based distributed environments (multi-service stacks, LocalStack, CI parity, networking)
  - **AWS** deployments with CI/CD pipelines (GitHub Actions)
  - **WASM** tooling and browser/runtime **Rust** applications (wasm-bindgen)
- **Blockchain / Cryptographic Infrastructure & Ecosystem Engineering**
  - **Rust** smart contract upgrades and Casper 2.0 migration work for Casper Association
  - **KMS** Secp256k1 API ([github.com/gRoussac/kms-secp256k1-api](https://github.com/gRoussac/kms-secp256k1-api))  
**Rust** custodial wallet middleware on **AWS** backed secp256k1 key lifecycle and transaction signing for Ethereum, Casper, and Cosmos
  - **WASM** runtime cryptographic layer (wasmtime), IAM-scoped role permissions, and secure signing workflows
- **Selected Open Source & Research Projects**
  - **Smart contract** development across **Rust** and Solidity ecosystems (Ethereum, Casper, Solana, Hedera)
  - AquaChain (EU-funded, India): CosmWasm **smart contracts** using Sylvia
  - Solana Anchor prototype: on-chain AI agent registry smart contract

## Software Engineer – Rust Smart Contract Developer | Nov 2022 – Dec 2024

### Casper Labs, San Diego, CA - Remote Freelance contractor via Interchouette (ITC)

*Ecosystem engineer at the Casper blockchain, focused on Rust/WASM smart contracts, SDK development, cryptographic infrastructure, and developer tooling for enterprise-grade tokenization and blockchain applications.*

#### • Smart Contracts & Protocol Development

- Developed Casper ecosystem **smart contracts** for tokenization and digital assets, including CEP-18 (fungible tokens), CEP-78 (NFT standard), CEP-85 (semi-fungible assets), and various contract systems (e.g., Dutch auctions)
- Built bridge and interoperability contracts, including integrations with external DeFi systems (e.g., Uniswap V2-style mechanisms)
- Contributed to Casper **smart contracts** testing, their JavaScript clients, releases, and CI/CD workflows

#### • SDKs & Developer Tooling

- Maintained CLI and client tooling for Casper **Rust Client** and Binary Port integrations
- Developed the Casper **Rust WASM SDK** for frontend and backend integrations, including browser support via **wasm-bindgen**
- Contributed to JavaScript SDKs (casper-js-sdk) including reviews and improvements

#### • Enterprise & Production Systems

- Designed and implemented EquityBrix real estate tokenization backend, including blockchain integration, **KMS** signing workflows, and full investor lifecycle (investment, redemption, token issuance)
- Built IPWE large-scale NFT minting system for patent tokenization on Casper (CEP-78), enabling bulk deployment at scale
- Contributed to development of AI backend platform (Prove AI) with **KMS** integration and frontend application layer

#### • Cryptography, Infrastructure & Security

- Designed and implemented enterprise **KMS/HSM** integrations in **TypeScript**, including **AWS KMS** and CloudHSM integrations, secp256k1 signing workflows
- Ported enterprise-grade Java HSM signing system (Spring Boot) as Casper **KMS** plugin
- Built **Dockerized** local testnet environments (NCTL multi-node setups, [github.com/gRoussac/casper-nctl-2-docker](https://github.com/gRoussac/casper-nctl-2-docker)) for reproducible blockchain development and testing

#### • Ecosystem Contributions & Community

- Built Casper Deployer (**Angular** + **NestJS** + **Rust/WASM**) for **smart contract** deployment and wallet interaction (Hackathon project, Casper ecosystem tooling)
- Provided technical support and integrations for ecosystem partners & Occasional contributions to Casper node

## Front End Developer | Apr 2017 – Apr 2022

### Independer, Hilversum, NL

*Frontend engineer at a large Dutch comparison platform for insurance, energy, mortgage, and financial products, working across multiple high-traffic customer-facing applications.*

- Led AngularJS to **Angular** migrations across customer-facing applications
- Mortgage (hypotheek) domain: developed complex comparison flows and a conversational mortgage advisory chatbot for the Dutch market
- Delivered frontend features across insurance, automotive, and financial product verticals (health insurance, car insurance, etc.)
- Built and maintained standalone frontend widgets using Preact, Vue.js, and native **JavaScript** outside of the main **Angular** stack
- Implemented strong automated testing and delivery pipelines using Jest, Cypress, and CI/CD workflows

## Python / JavaScript Developer | Jul 2016 – Feb 2017

### Byte B.V. (Hypernode), Amsterdam, NL

*Backend and platform engineer working on Magento hosting infrastructure (Hypernode), customer tooling, and security-focused analysis of large-scale merchant ecosystems.*

- **React** and **TypeScript** development on Hypernode customer backend platform
- Built asynchronous **Python** pipelines to analyse and process large-scale merchant site datasets (Magereport / Hypernode ecosystem)
- Developed headless browser analysis tooling (Puppeteer, PhantomJS) to inspect and deobfuscate client-side JavaScript for security and integrity checks
- Created the open-source "Evaluator" project, including a deobfuscation API and **Rust**-based CLI for parallelised merchant scanning and evaluation
- Conducted large-scale analysis of compromised merchant websites (credit-card skimming / script injection detection), identifying ~1,800 affected sites. Worked across Python, Node.js, and DevOps tooling on hosting infrastructure (Hypernode, Magento, Linux)

## **Lead Core PHP / MySQL Developer | Dec 2012 – Feb 2016**

### **PrestaShop, Paris, FR**

*Technical lead on the PrestaShop open-source platform, responsible for Core delivery coordination, release management, and developer workflow across multiple major versions (v1.4–v1.7).*

- Owned Core delivery workflows including bug triage, backlog management, assignment, code review, release coordination and QA collaboration
- Contributed to and helped ship major PrestaShop Core releases from v1.4 through v1.7
- Hands-on development in PHP, MySQL, and JavaScript on major e-commerce platform; Major contributor to the PrestaShop Core and official modules.
- Active contributor and reviewer in the open-source ecosystem, working through GitHub-based workflows

## **Owner - Managing Director | Nov 2009 – Oct 2012**

### **Interchouette (ITC), Paris, FR**

*Founded and managed a PrestaShop and WordPress agency (Silver Partner), delivering e-commerce development, integrations, and training services. Full responsibility for business operations, client acquisition, delivery, and team management (~€250K annual revenue, employees and interns).*

Also PrestaShop Trainer | Sep 2011 – Aug 2012, e-Commerce Academy, Paris, FR

- Led end-to-end agency operations including sales, client management, subcontractors, hiring, and delivery oversight
- Delivered PHP / MySQL development, PrestaShop and WordPress implementations, and merchant integrations for production e-commerce sites. Delivered PrestaShop developer and theme training covering modules, frontend customization, template systems and UI integration

## **Project Manager – PHP / MySQL Developer – XHTML Integrator | Jun 2008 – Nov 2009**

### **PrestaShop, Paris, FR**

*Core contributor to an early-stage open-source e-commerce platform, working on core product development and merchant implementations across multiple production deployments.*

- PHP / MySQL / JavaScript development and XHTML integration on PrestaShop Core platform
- Merchant implementations and production rollouts for early adopters (e.g., smallable.com, labagagerie.com, 4-pieds.com)
- Developed payment modules (Atos, Paybox, Cybermut), logistics integrations (Crosslog), and product feed exports prior to the Addons marketplace. Coordinated outsourced theme and integration projects supporting early commercial services

## **Web Project Manager – PHP / MySQL Developer | Feb 2007 – May 2008**

### **Come&Stay, Paris, FR**

*Backend developer and project contributor at a Paris-based email marketing company specializing in large-scale campaigns.*

- Developed PHP/MySQL applications and web services for large-scale email marketing platforms and client integrations

## **Owner – Associate Director | Jan 2005 – Jan 2007**

### **So Many Wines Ltd (somanywines.com), Guildford, GB**

*Founder and technical operator of an online wine retail business, responsible for end-to-end technical systems and logistics operations.*

- Designed, developed, and launched the e-commerce platform using PHP/MySQL/JavaScript
- Built internal back-office systems (VB + MySQL) for orders, inventory, customer and operations management
- Managed end-to-end business operations including warehousing, customs, logistics, and supplier contracts

## **PHP / MySQL Developer | Sep 2003 – Aug 2004**

### **Cedelia, Tremblay, FR**

*Web agency working on Streamplug, a video streaming platform and web tooling solution.*

- Developed PHP/MySQL backend features and JavaScript/XHTML frontends for web applications and early video streaming web components

## EDUCATION

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### Master's (DESS) IT Applications for Economic & Social Management | 2003 – 2004

Université Paris VII Cité

PISE, IT Projects for Corporate Strategy

### Bachelor of Arts, International Business | 1999 – 2003

ESCE International Business School, La Défense

Focus: Logistics & Procurement, Entrepreneurship & Project Management

### Erasmus Exchange | 2001

HTW Berlin (Hochschule für Technik und Wirtschaft Berlin)

International Marketing & Quality Management

## LANGUAGES

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### English

Professional Working Proficiency

- TOEIC Score 915 (2004)
- Diploma in Business English  
Franco-British CoC (2001)

### Dutch

Intermediate (B2)

### German

Conversational

- Wirtschaftsdeutsch  
Franco-German CoC (2002)

### French

Native

## PERSONAL INTERESTS

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- Music production & hardware jamming (Ableton, synthesizers, turntablism)
- Archaeology
- Fitness training
- Poker
- Algorithmic trading