

# MARCO SÈVEGRAND

Software Engineer | Infrastructure & Systems | Cybersecurity

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## About Me

Software engineering graduate focused on infrastructure, networking, application security, and secure software development lifecycles. Gaining experience with Linux VPS environments, CI/CD pipelines and full-stack development. Currently pursuing Azure certification and enrolling in a Master's in Cybersecurity.

## Experience

### Full-Stack Web Developer (Part-time)

Feb 2026 – Present

*Biobrassica*

*Braga, Portugal*

- Sole developer for the company's online presence: built a full branding page and e-commerce store with product CRUD, inventory management, and secure payment integration via IfThenPay.
- Initially developed with Django/Python on a Linux VPS; currently migrating the stack to Laravel/PHP on cPanel to simplify maintenance and handover.

### Store Associate (Part-time)

Feb 2026 – Present

*Biobrassica*

*Braga, Portugal*

- Oversaw stock management and replenishment, ensuring consistent product availability.
- Delivered front-line customer service, handling inquiries and in-store sales.

### Math & Physics Tutor (Self-employed)

Sep 2025 – Present

*Remote*

- Mentored high-school students in mathematics and physics through one-to-one lessons.
- Designed study plans aligned to each student's exam goals and skill level.

## Education & Credentials

### B.Sc. Software Engineering

Sep 2023 – Jun 2026

*University of Minho*

*Braga, Portugal*

- Final grade: 16/20. Coursework includes distributed systems, cybersecurity, operating systems, compilers, algorithms, databases, AI, and software systems design.

### Secondary Education

Sep 2020 – Jun 2023

*Escola Secundária Fernão de Magalhães*

*Braga, Portugal*

- Final grade: 19.6/20. Participated in Mathematics Olympiads, Chemistry Olympiads, and Youth Parliament.

### English C1 Advanced

May 2023

*Cambridge Assessment English*

*Certification ID: C1827928*

### Author – “Mistério no Aeroclube”

2019

*Published fiction book (80 pages, teen demographic)*

## Skills

**Core Languages** Go & C.

**Systems & Infrastructure** Linux, Docker, VPS.

**Architecture & Security Concepts** Concurrent Programming, Network Protocols, Applied Cryptography, Threat Modeling.

**Currently Learning** Kubernetes, Azure Cloud Services.

**Soft Skills** Proactive, clear communication, active listening, critical thinking, learning agility

**Spoken Languages** Portuguese (Native), English (C1)

## Selected Projects

### Secure Multi-Device Messaging Platform

[Grade: 18/20, B+]

Python, TCP/TLS, E2EE, X3DH, Ed25519, X25519, AES-GCM, Argon2id, SQLite, Textual

- Built an end-to-end encrypted messaging system with multi-device identity, offline delivery, group messaging, local history, and a terminal TUI.
- Implemented X3DH session bootstrap, symmetric ratcheting, device challenge-response authentication, certificate-based identity binding, and at-rest encryption for client/server secrets.

### Automated Software Testing & Quality Analysis Pipeline

[Grade: 18.5/20, A-]

Java, Maven, JUnit 5, jqwik, JaCoCo, PIT, EvoSuite, Make

- Strengthened two Java applications with unit tests, property-based tests, coverage analysis, mutation testing, and automated test generation.
- Automated the full quality pipeline with Maven/Make, expanding the suite to 444 tests and achieving PIT mutation scores of 76% and 85% across the two projects.

### Document Indexing and Search Service

[Grade: 20/20, A+]

C, Linux, POSIX IPC, FIFOs, LRU Cache, Concurrency

- Built a Linux document indexing service around FIFO-based client-server communication with persistent indexing for stateful retrieval.
- Added an LRU cache and parallel keyword search, with process cleanup and concurrency control for safe multi-document execution.

### Space Communication Protocols & Simulator

[Grade: 19.5/20, A+]

Go, TCP/UDP, React, Node.js, CORE Emulator, FEC

- Designed custom TCP and UDP protocols with FEC, fragmentation, ordered delivery, and exponential backoff retransmission.
- Simulated a mothership-rover mission architecture and built a real-time dashboard validated in CORE under packet loss and latency.

### LLM-Assisted Software Development Lifecycle

[Grade: 19/20, A]

TypeScript, React, Fastify, PostgreSQL, Prisma, Zod, Turborepo, LLM-Augmented Engineering

- Conducted a complete software development lifecycle from requirements through architecture, implementation, testing, and documentation, using structured LLM assistance from Claude, GitHub Copilot, and Stitch AI; catalogued and critically reviewed all 48 prompts.
- Applied a three-pillar methodology of upfront planning, strict modular decomposition, and mandatory human review on every LLM output, explicitly distinguishing the approach from unstructured “vibe coding.”
- Selected among the top 4 projects in the curricular unit and featured at the ES3A workshop, held as part of Universidade do Minho’s Departamento de Informática 50th-anniversary celebrations.

### Distributed Time-Series Storage System

[Grade: 18/20, B+]

Java, TCP, Multithreading, Thread Pool, Pub/Sub, Persistence

- Built a concurrent multi-client TCP server with a custom framed protocol, thread-pool execution, and safe shared-state handling.
- Developed a configurable time-series storage engine with in-memory caching, disk persistence, and real-time pub/sub notifications.