

Jorge Morais

FullStack & Embedded Systems Developer

Full-stack developer with 5+ years building high-performance web applications and embedded systems. From C-based payment machine APIs to React/Node.js platforms processing 900k+ documents. Specialized in performance optimization, real-time systems, and IoT protocols.

Location: Braga, Portugal

Phone: +351 910 559 307

Email: jorgemopanc@icloud.com

Website: jorgemopanc.com

LinkedIn: jorge-mopanc

GitHub: jorgemorais272

PROFESSIONAL EXPERIENCE

Full-Stack Tech Lead

Jun 2023 - Present | Braga, Portugal

Balanças Marques

C • React • Node.js • TypeScript • MQTT • CCTalk • ID003 • Socket.IO • MySQL

- Architected **Alice Payment Machine API** in C with manual memory management (malloc/free), validated with Valgrind for zero memory leaks, implementing CCTalk/ID003 protocols for bill validators and control boards
- Engineered **Qore platform** memory footprint optimization, reducing consumption from **3GB to 850MB (72% reduction)** through efficient data structures and memory profiling
- Optimized mass data processing pipeline for **900k+ POS documents**, reducing execution time from **2 days to 2h (96% faster)** via concurrent processing and multithreading
- Developed enterprise **AI chat platform** with **RBAC** permissions and multi-level access to technical documentation and product knowledge base, **RAG** system with **embeddings**, vector search and semantic retrieval delivering step-by-step guides, images and videos to clients, support, technicians and dev teams; includes cache management for cost control, privacy compliance and chat insights
- As **Team Lead**, oversees technical direction, code reviews, sprint planning and mentoring of the development team within the department

Frontend Developer

Oct 2022 - May 2023 | Remote (Madeira/Norway)

Frontkom

React • Vue.js • Drupal • TypeScript • Sass • Tailwind • Figma

- Developed **10+ enterprise websites** for Norwegian clients using React and Drupal headless CMS
- Collaborated with international team across 3 time zones using Agile/Scrum methodologies

Web Developer

Aug 2021 - Oct 2022 | Guimarães, Portugal

Netgocio

Vue.js • JavaScript • PHP • MySQL • Bootstrap • Sass

- Managed **400+ hosting deployments** for B2B/B2C e-commerce platforms with **10k+ monthly users** and 99.9% uptime
- Implemented responsive design system using Sass and Bootstrap with mobile-first approach

EDUCATION & CERTIFICATIONS

University Entrance Preparation Programme (In Progress) | Universidade Aberta |

2025 - Present

Preparation course for university entrance examination, Computer Engineering degree.

CS50: Introduction to Computer Science (In Progress) | Harvard University | 2025

Front-end Professional Course - Level 4 EQF | IwTraining | 2019-2020

Technical Certifications:

JavaScript • Git & GitHub • Data Structures & Algorithms • Web Design

TECHNICAL SKILLS

FRONTEND:

React • Vue.js • Next.js • TypeScript • JavaScript • HTML5/CSS3 • Tailwind • Sass

BACKEND:

Node.js • Express.js • REST APIs • GraphQL • Socket.IO • Microservices

EMBEDDED & IOT:

C • CCTalk • MQTT • Hardware Integration • Real-time Systems

DATABASE & DEVOPS:

PostgreSQL • MySQL • MongoDB • Docker • AWS • Git • CI/CD

LANGUAGES

Portuguese

Native / Bilingual

English

Professional Working

Spanish

Professional Working

Personal Statement

Jorge Morais — Beyond the Code

My journey into software development didn't begin in a classroom, it began with two decades of experience that taught me how people, systems and decisions interact under pressure. From **four years in the Portuguese Army**, where I led teams in operational contexts including international missions, to seven years managing teams at **McDonald's**, and then four years in **real estate** building client relationships from scratch, every chapter was an education in problem-solving, responsibility and human dynamics.

That experience shaped how I approach engineering: with structure, accountability, and a clear understanding that software exists to serve people. As **Full-Stack Tech Lead** at Balanças Marques, I bring both technical depth and the kind of leadership clarity that only comes from having led teams in genuinely demanding environments, long before writing a single line of code.

In parallel with my engineering career, I am currently completing my first book, *Código Mental*, a 150-page work in Portuguese on consciousness, personal growth and the kind of mental clarity that makes us better at whatever we do. It draws from real experiences across my career and life, and was written with a clear intention: to leave something lasting for my children, and to contribute something meaningful beyond my professional output. Writing a full book while working full-time as a developer and team lead has been its own exercise in discipline, focus and long-form thinking.

Intellectually, I am drawn to the frontier. I have developed a genuine curiosity for **quantum computing and quantum physics**, not as a pastime, but as a direction I intend to move toward seriously. The probabilistic nature of quantum systems, the implications for cryptography and optimization, and the philosophical depth of quantum mechanics resonate strongly with how I think about complexity and uncertainty in systems design.

This year I also took a significant step toward formalising my academic foundation by enrolling in the **university entrance preparation programme at Universidade Aberta**, with the goal of pursuing a degree in Computer Engineering. It is a conscious choice to invest in rigorous, formal education alongside an already active professional career, because I believe depth matters, and that the best developers combine hands-on experience with solid theoretical grounding.

I am not a developer who simply ships code and moves on. I think about the systems I build, the teams I work with, and the broader context in which technology operates. If you are looking for someone who brings both technical seniority and genuine human depth to the table, I would welcome the conversation.

Braga, Portugal · jorgemopanc.com
jorgemopanc@icloud.com · +351 910 559 307

Jorge Morais
Full-Stack Tech Lead