Marco Barroso Martín

Software Engineer

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Profile

Software Engineer and Computer Science and Engineering student at UC3M. I build complete, production-ready products: full-stack web applications, LLM-based systems and code analysis tools. Ten years of conservatory training have given me discipline, attention to detail and the ability to work as part of a team under pressure.

Experience

Software Engineer — Sept. 2026 – Present
laaabs. — Remote · Full-time

- Software development as part of the engineering team.

Freelance Web Developer — Madrid · Remote
Client projects

- Design, development and deployment of websites for real businesses (*Ochoasax*, *Varas y Más Luthier*).

Secretary — 2026 – Present
LTR Music Association

Projects

HiveMind — Top 3, JetBrains × BEST UC3M Hackathon | *LLMs, embeddings, vector DB, PTY* — 48 h

- Multi-agent synchronization system that coordinates several developers and their AI assistants in real time, detecting semantic collisions and logical conflicts before merging.
- Works with terminal-based AI assistants (Gemini, Claude, GPT) with no setup required, and compares the meaning of each developer's changes using embeddings and vector search to anticipate overlaps.

Piso Compartido | *Next.js, TypeScript, Supabase, PostgreSQL* — app code

- PWA in daily use for managing shared expenses, chores and shopping; greedy algorithm that reduces any debt network to the minimum number of transfers.
- Web Push (VAPID, Service Worker, Edge Functions), Row Level Security and monitoring with Sentry.

Ochoasax | *Web design, UX, conversion* — website

- Booking website for a saxophonist and DJ: a form that generates a pre-filled WhatsApp message with the event details.

Varas y Más Luthier | *UI/UX, performance, local SEO* — website

- Website and portfolio for a luthier workshop: service catalog, optimized gallery and local SEO.

Education

Bachelor's Degree in Computer Science and Engineering — 2025 – Present
Universidad Carlos III de Madrid (UC3M) — 2nd year

Professional Music Diploma, Trombone — 2016 – 2026
Getafe Professional Music Conservatory — Getafe

Bilingual High School Diploma (Bachillerato), Science and Technology — 2023 – 2025
IES Neil Armstrong — Madrid

Technical Skills

Languages	TypeScript, JavaScript, Python, SQL, HTML, CSS
Web	Next.js, React, PWA, Service Workers, Web Push, Vercel
Backend & Data	Supabase, PostgreSQL (Row Level Security), Edge Functions, vector databases
AI	LLM APIs (Claude, Gemini, GPT), embeddings, multi-agent systems, AI-assisted development
Tools	Git, GitHub, continuous integration, Sentry, IntelliJ IDEA

Languages & Other

Languages	Spanish (native) · English (B2, Cambridge)
Music	Trombonist in the Getafe Municipal Band, in professional bands and in an events ensemble; private music and trombone teacher