# Hugo Nicolau

Backend Engineer

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## SUMMARY

Backend Engineer with hands-on experience building financial systems, payment integrations, and event-driven microservices at scale. Proven track record optimizing critical APIs — reduced a query from 2 minutes to ~300ms for 120k+ users. Strong expertise in Node.js, TypeScript, and PostgreSQL, with growing experience in event-driven architecture, cloud infrastructure, and third-party payment/identity integrations (Stripe, Sicoob).

## EXPERIENCE

**Backend Engineer** 2024 – Present

*TeamSoft Technology and Systems Remote, Brazil*

- Designed and built financial systems processing payments for 120k+ users, including PIX/Boleto banking integration (webhooks, QR code generation, automated reconciliation) and a Stripe Connect-based marketplace payment flow with event-driven processing across a microservices architecture.
- Reduced response time on critical, high-throughput endpoints from 2 minutes to ~300ms through cursor-based pagination, caching, and query optimization.
- Built end-to-end approval workflows — user onboarding, KYC/identity verification, and booking state machines — with document upload, automated notifications, and compliance validation.
- Implemented audit logging and traceability infrastructure (Event Subscribers, AsyncLocalStorage) and scheduled job systems for recurring business processes.
- Led a refactor decomposing an overloaded core entity into domain-specific models, standardizing API contracts across the codebase.

*TypeScript, NestJS, PostgreSQL, TypeORM, CQRS, BullMQ, Redis, AWS S3, Stripe Connect, Firebase Cloud Messaging, REST APIs, Jest*

## PROJECTS

Actively building and maintaining several live side projects (see portfolio above) — including a spoiler-free discussion platform and a real-time multiplayer web game — using Cloudflare Workers, Durable Objects, D1, R2, and Drizzle ORM.

## SKILLS

**Backend:** Node.js, NestJS, TypeScript, REST APIs, CQRS, Clean Architecture, Event-Driven Microservices — React (frontend, as needed)

**Databases & Caching:** PostgreSQL, TypeORM, MongoDB, Redis, Cloudflare D1, Query Optimization, Database Modeling

**Payments & Integrations:** Stripe Connect, Sicoob (PIX/Boleto), Webhooks, Firebase Cloud Messaging

**Cloudflare Platform:** Workers, Durable Objects, D1, R2, KV, Workers Assets, Wrangler CLI

**Cloud & Infrastructure:** AWS S3, Google Cloud (Cloud SQL, Cloud Run), Docker, BullMQ, Cron Jobs

**Other Languages (academic):** Java, C, C++, and Python from Computer Science coursework

**Practices:** Test-Driven Development (Jest, Vitest), Git Flow, Code Review, API Documentation (Swagger), AI-assisted development (Claude)

## EDUCATION

**B.Sc. in Computer Science** 2024 – 2028 (Expected)

*Federal University of Juiz de Fora (UFJF)*

## CERTIFICATIONS & LANGUAGES

- Harvard CS50 — Introduction to Computer Science
- EF SET English Certificate — C2 Proficient (Full Professional Fluency)