

Elhadj Arroyo

Fullstack Developer

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PROFILE

Fullstack developer with commercial experience across the full stack of a production vehicle rental marketplace — backend and frontend, from architecture and data modelling through to real-time systems, payment integrations, and deployment. Before that I spent two years as a freelance developer building websites and small applications for local businesses. I am looking to join a strong team where I can keep growing. I take ownership of what I build and pick things up quickly.

EXPERIENCE

Fullstack Developer · Komvoy

MARCH 2024 – PRESENT

Komvoy is a marketplace platform. I was the primary developer on both the NestJS backend and the React client, working under the guidance of a more senior technical lead. The following covers a selection of the systems I built — the product is broader in scope.

- **Real-time systems** — Developed real-time communication gateways with secure authentication, delivering live updates to users across several distinct application domains.
- **Notification system** — Architected a multi-channel notification system using the Strategy pattern. Implemented delivery across multiple channels (WebSocket, Web Push, email, and SMS) with retry logic and exponential backoff. Managed notification persistence via a dedicated storage module and synchronised real-time state on the frontend.
- **User profile and verification** — Implemented user verification flows, including multi-provider phone verification with secure caching. Handled internationalised transactional communications and event notifications.
- **Domain workflow and data modelling** — Designed and evolved a complex relational database schema supporting core business entities and workflows. Managed numerous incremental migrations without data loss and implemented shared validation logic across the stack.
- **Document generation pipeline** — Built a dynamic document generation pipeline to produce legally structured, conditionally formatted PDFs, coordinating digital signature capture across the backend and frontend.
- **Payment and billing** — Integrated comprehensive payment processing solutions, handling complex workflows such as onboarding, recurring payments, deposits, and secure, idempotent webhook processing. Developed an automated, compliant invoice generation system.
- **Authorisation** — Implemented fine-grained, attribute-based access control (ABAC) across the application, securing backend endpoints and frontend routes based on user roles and permissions.
- **Complex frontend forms** — Developed multi-step wizard interfaces with robust validation, handling intricate data entry, bulk operations, and real-time state management.
- **Deployment and cloud infrastructure** — Managed cloud infrastructure and deployment pipelines using containerisation and Infrastructure as Code (IaC), orchestrating various managed services for databases, caching, storage, and compute.

Freelance Web Developer · Self-employed

2021 – 2023

Built websites and small web applications for local businesses and individual clients. Worked directly with clients to gather requirements, design simple interfaces, and deliver working products. Developed foundations in frontend development, version control, and direct client communication.

TECHNICAL SKILLS

Backend	Node.js, NestJS (modular architecture, guards, interceptors, decorators), TypeScript, Use-Case / Clean Architecture
Databases	PostgreSQL via TypeORM (migrations, relations, query builder, 80+ migrations), DynamoDB (AWS SDK v3), Redis (ElastiCache)
Auth & Access	JWT (custom strategy + refresh tokens), Passport.js (Google OAuth, Facebook OAuth), CASL (attribute-based access control)
Real-time	Socket.IO — rentals gateway, fleet gateway, vehicle gateway, chat gateway, notifications gateway
Payments	Stripe (Connect, PaymentIntents, SEPA Direct Debit, idempotent webhooks, HMAC validation, DepositStateMachine)
Notifications	Nodemailer + AWS SES, AWS SNS, Twilio (SMS + verification), Web Push (VAPID service worker)
Files & Media	AWS S3 (upload, signed URLs), Cloudinary, Sharp (image processing), Puppeteer + Handlebars (PDF generation)
Frontend	React 18, TypeScript, Vite, TanStack Router (file-based, route guards), TanStack Query, Zustand (domain-split stores)
Forms & UI	React Hook Form, Zod (multi-step wizards), Material UI v5 (custom theme), Stripe Elements, MapLibre GL JS
i18n & Testing	i18next (EN/ES runtime switching), Playwright (E2E), Vitest, Jest (unit — use cases, controllers, services)
DevOps / Cloud	AWS ECS Fargate, ECR, RDS, DynamoDB, ElastiCache, S3, CloudFront, ALB, Lambda, SES, Secrets Manager, CloudWatch, CloudFormation
CI/CD & DX	Docker (multi-stage builds), GitHub Actions (15+ workflows), Husky, Commitlint, ESLint, Prettier, Semgrep (SAST)
Patterns	Strategy (notification channels, SMS clients, payment gateways), Observer (WebSocket fan-out), State Machine (deposit, rental transitions), Factory, Clean Architecture

EDUCATION & CERTIFICATION

FullStack Developer Certificate

4Geeks Academy, Spain
2023

BA Hons Music and Sound for the Media

London South Bank University, UK
First Class Honours (1:1)
2013

LANGUAGES

Spanish — Native

English — Professional working proficiency. Lived and studied in London for 13 years; degree-level academic and professional English.

STRENGTHS

- **Ownership** — I own problems end-to-end.
- **Resourceful** — I learn fast and adapt.
- **Collaborative** — I communicate clearly and work well as part of a team.