Engineer Platform

Backend Engineering

12 achievements

Connect the parts of your system

The work collected under “Backend Engineering” shows one part of a working system. We can help connect that part to the rest of your operation. The part users never see: where the data lives, what the rules are, and how other systems are allowed to talk to it.

Explore our services Get in touch →

Find a comparable challenge

Follow an example that resembles your situation. Its review describes the decisions behind the result, beyond the technology label. Built organization context switching for users — act as any organisation you manage, safely

Built organization context switching for users Get in touch →

Built organization context switching for users

Designed an organization context-switching system with client localStorage and server-side cookie mirroring, letting users act as managed organizations while enforcing least-privilege authorization.

Generated the API contract from the database out

Generated the API contract outward from the database — OpenAPI, a 44,076-line typed TypeScript client, 61 mock handlers and the limits the UI enforces — with a guard at every hop that fails on drift.

Built email with failover and delivery logging

Built email as a platform capability — three providers with failover, delivery webhooks, send and delivery logging, templating and campaigns — behind a startup check that will not boot without one.

Hardened the application with nonce-based CSP

Hardened the application with nonce-based CSP, HSTS, SameSite cookies, least-privilege database roles and server-side entitlement re-checks.

Built a test suite across Go, SQL and browser

Built a layered automated test suite — 981 Go tests, 543 frontend and browser specs, 494 SQL behavioural tests — with mutation testing, property-based tests and an accessibility gate.

Built Stripe and in-app purchase entitlements

Built the payments and entitlements layer — Stripe alongside Apple and Google in-app purchase — gating the directory, search and export through an 11-table access model checked on the server.

Moved slow work onto a River job queue

Moved slow work off the request path onto a River job queue — 15 worker modules, 8 scheduled tasks and 20 pg_cron jobs — so a request returns while the work behind it carries on.

Built first-party error monitoring and tracing

Built first-party error monitoring and OpenTelemetry tracing rather than buying them — payload sanitising, spike and regression detection, symbolication and a synthetic heartbeat — behind 11 operator views.

Built fail-closed rate limiting and anti-abuse

Built fail-closed abuse controls — 22 Redis-backed rate limiters, Cloudflare Turnstile, request idempotency and an origin lock — so the platform sheds bots and floods instead of trusting its callers.

Built company ownership claims and adjudication

Built company ownership claims end to end — a user claims a company, an administrator adjudicates, and an approval rewrites the authorization graph that decides who is allowed to edit what.

Wrote a parser verifying every FFI call

Wrote a parser that reads the real 7,308-line C header and verifies every call site, every enum constant and that every pointer-owning class is final, after a hand-written placeholder header let calls to three removed functions compile, link and crash.

Reached the unused half of the core

Reached the half of the messaging core the application had never used — backup transfer, disappearing messages, message editing and resending, verified invitations, proxies and encryption policy — driving every test against the real library with no mocks.

Focus the engineering effort

Describe the workflow, the existing interfaces and the users who need the change. We can define a testable delivery and a handover that lets your team maintain it.

See what it costs Get in touch →

Put the subject in your context

Tell us how “Backend Engineering” appears in your own system. We can help choose the relevant service and define the work around it.

Explore our services

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