Engineer

Solution Architecture

14 achievements

Connect the parts of your system

The work collected under “Solution Architecture” shows one part of a working system. We can help connect that part to the rest of your operation. The shape of a system worked out on paper first, so the parts fit and the cost is known before anyone writes code.

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. One infrastructure plan for 14 departments — 14 research departments on one infrastructure plan

One infrastructure plan for 14 departments Get in touch →

One infrastructure plan for 14 departments

Designed a comprehensive infrastructure framework for a research institute impacting 14 departments, featuring flexible modules, unified data pipelines, and structured support strategies for long-term adoption.

Led a GIS map application to 10x revenue growth

Led the software development of a GIS map application, driving revenue growth by 10x and positioning the product as a primary data asset.

Overhauled internal processes, saving 8,000 hours

Overhauled internal processes, saving 8,000 hours by improving software architecture, systems, and scheduling efficiency.

Infrastructure simplified beyond AWS

Reworked an international client’s infrastructure by removing unused services, adjusting capacity and moving workloads away from AWS. The founder reports a 10x reduction in cloud costs with no loss of productivity.

A maritime platform with clear system boundaries

Architected a layered maritime platform separating a Next.js PWA frontend, a Go (Huma/Fiber) API, and a PostgreSQL function layer, keeping all business logic in the database.

Set the platform's founding technical decisions

Set the platform's founding decisions in the weeks after the repository opened in November 2025 — the layering, database-first data access and the zero-warnings bar — and they still hold nine months on.

Built infrastructure that still runs years later

Planned and implemented new infrastructure functionality for internal and external systems, building solutions durable enough to still run years later with minimal change.

Built the entire core infrastructure from scratch

As one of the first hires, designed and built the entire core infrastructure and supporting processes from scratch for a green-energy SaaS startup, laying the foundation for rapid growth.

Public services on a small server

Hosted the company’s public services on a single-core 512 MB host — a git forge, a web server for seven domains, Tor, two alternative-protocol servers and intrusion banning — treating 464 MB of usable memory as the design constraint; backup automation is a separate implementation.

Split every operational secret per host

Split the four per-host operational secrets after establishing that two hosts sharing one dead-man's switch alert less than two switches, not more, and that a shared backup passphrase can expose both hosts' backups, even in separate repositories, if someone obtains it and can read both repositories' encrypted data and key files.

Built a database-driven CV generator

Built a database-driven CV, references, portfolio and cover-letter generator in Python — 41 modules, 10,580 lines — rendering six output formats from one 23-table SQLite source assembled by a 19-step idempotent pipeline.

Built a native macOS client in Swift 6

Built a native macOS messaging client in Swift 6 and SwiftUI — 11,141 lines across 53 files — over the C interface of a Rust core linked as a static archive from a pinned revision.

A bounded event pipeline for a macOS app

Bounded event buffers and logging after a recorded macOS incident with 41 MB per second growth and 111 GB of compressed pages on a 36 GB machine; a recorded full test run reduced core log lines from 610,996 to 1,411.

Adopted Swift 6 strict concurrency over C

Adopted Swift 6 complete strict concurrency with no actors, bridging a blocking C event loop to the main actor through one producer, one consumer and one ordering — after establishing that a task per event loses the ordering the interface depends on.

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 “Solution Architecture” 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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