james cleveland

senior full stack engineer

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github: @radiosilence
location: London or remote. I like working with people in person, as long as there's some flexibility.

Polyglot engineer. Twenty-five years writing code, twenty paid for, spanning frontend, backend, infrastructure, mobile and embedded. Elixir and Go services, GraphQL gateways, React, native Swift and Kotlin, Rust tooling, and Kubernetes declared in Terraform and Pulumi. I care more about how a system is architected and that the language choice is appropriate, than having any specific preference.

I like greenfield, and I like taking something that works and making it what it should have been. I started out freelancing, so I'm used to owning every bug and making the product and UX decisions. Explaining my thinking is part of the job. If I can't get an idea across, I don't understand it well enough yet, and explaining it clearly is how I get the best ideas out of other people, often better than mine.

My recent projects are AI-assisted. Without experience, these tools make it easy to stop learning; with it, you know which questions to ask in order to get things built quickly and without a loss of quality.

I'm the person people come to when something needs doing properly.

selected work

- **Moved Fresha's reviews out of its monolith with the marketplace live.** 90M rows migrated with no downtime into an Elixir service I designed, which now serves 157M requests a week.
- **Got Microsoft to change Azure Policy.** It couldn't express a compliance check Credit Suisse's cloud security tooling needed, so I went to Microsoft and made the case. A few weeks later it could, for my client and everyone else.
- **Fixed a security hole in pip.** In 2013 it fetched packages over plain HTTP and verified nothing. I wrote the SSL certificate verification patch, which shipped in pip 1.3 as the fix for CVE-2013-1629 with me credited in the release notes.
- **Built kōan**, a music player and server: one Rust core linked directly into native apps for iOS, macOS and Android, a terminal UI and a server, with room correction, DLNA and playback handed between devices.

recent work

Senior Full Stack Engineer, Fresha 2025-Present

World's largest beauty & wellness marketplace: 1 billion+ appointments, 120k+ partner businesses across 120+ countries

Key Skills: Elixir, Phoenix, Ecto, OTP, gRPC, GraphQL, TypeScript, Next.js, React, PostgreSQL, Kafka, Snowflake, Datadog, Kubernetes

- **Designed and led the service that took reviews out of Fresha's monolith.** Ratings decide where a venue ranks, so this is some of the company's most important data. Elixir with its own Postgres and a denormalised schema so aggregates, facets and sorts never join across domains; gRPC for other services; GraphQL with cost limits, field-level redaction and nullable roots for the apps; an outbox to Kafka feeding marketplace ranking. Moved

90M rows with no downtime and every stage reversible, using a resumable migration tool I wrote that throttles on the database's own health. Agreed the new boundary with the ten teams that depended on it, owned delivery across web, iOS, Android and backend, and took reads from a 5% canary to 100% in two days. It now serves 157M requests a week.

- **Rebuilt consumer search** across the web app, gateway and search service, then retired the old one: autocomplete, search history as its own service, and server-side map clustering streamed as you pan. Around 119M requests a week.
- **Built AI review replies end to end**, a paid feature for businesses: replies generated in the business's own voice, moderation, scheduled publishing, billing and the UI.
- **Shipped Loyalty**, Fresha's largest consumer release at the time (points, tiers and wallet, schema to UI), while learning Elixir.
- **Helped shape the organisation's approach to supply chain security**, hardened the shared Elixir libraries, mentored engineers, and built an internal Claude plugin marketplace, including a skill that takes a ticket to an opened pull request.

Senior Full Stack Engineer, Apolitical 2024

Key Skills: Next.js, NestJS, React, TypeScript, Kubernetes, Vite, Express, SCSS, GitHub Actions

- Built Next.js features and NestJS APIs for a move to a new architecture, and kept the existing React frontends and Express microservices running until the move was done.
- Debugged performance problems in services on Kubernetes and extended the GitHub Actions pipelines.

Senior Cloud Native Engineer, EngineerBetter 2022-2024

Key Skills: AWS, Azure, Kubernetes, Terraform, Concourse, Docker, Go, Python, CSPM, Cloud Foundry, BOSH

- Consultancy moving enterprises onto continuous deployment and cloud platforms; I joined to broaden from frontend into infrastructure. Made large estates declarative and reproducible, favouring resistance to drift over strict GitOps where the two disagreed.
- Wrote Kubernetes controllers in Go, and CI in Concourse, GitHub Actions and GitLab for estates where the pipeline is a large system of its own.
- Implemented Cloud Security Posture Management for several clients. When Azure Policy couldn't express a check Credit Suisse needed, I made the case at Microsoft's Paddington office and they added it.
- Wrote Python tooling to audit code and deployments across estates too large to inspect by hand.
- Between clients, contributed to Kubernetes External Secrets Operator, mostly by pairing with less experienced engineers and bringing them on.

Consultant Full Stack / Mobile Engineer, Superbike Factory (Freelance) 2021-2024

Concurrent with EngineerBetter, ROXi and Sapien Interactive

Key Skills: React Native, Expo, TypeScript, AWS CDK, Lambda, DynamoDB, API Gateway, CloudFront, MobX-State-Tree, BitBucket Pipelines

- Built an Android app for bike delivery drivers and the AWS backend behind it, alone and from nothing: jobs, notes and photos, video training with quizzes, and taking the customer's payment. React Native on Expo, with CDK, Lambda, DynamoDB, API Gateway and CloudFront integrated into the client's existing AWS services.
- Audited the client's existing infrastructure and fixed a number of security holes in it.

Lead Developer, ROXi 2020-2022

Key Skills: Swift, Java, WebSockets, React Native, TypeScript, Astro, React, Node.js, AWS, MobX-State-Tree, Vite

- Came up with the architecture for the core product, a React Native companion to a TV app that ran in a browser and couldn't host a server: the phone runs a WebSocket server and talks to the TV directly over the LAN, with low latency.
- Wrote that transport as native modules in Java and Swift, thread-safe on iOS through Grand Central Dispatch.
- Built internal curation tools on MobX-State-Tree and Vite, and a statically generated e-commerce and account site in Astro when Astro was new.

Consultant Frontend Developer, Sapien Interactive (Freelance) 2019-2024

Concurrent with ROXi, EngineerBetter and Superbike Factory

Key Skills: React Native, TypeScript, Firebase, MobX-State-Tree, Node.js, WebSockets

- Built the app for a new venture and revived an earlier one in React Native, MobX-State-Tree and Firebase, moving the codebase from class components to hooks.

Senior Mobile Developer, Zopa Financial Services 2018-2020

Key Skills: Swift, Kotlin, React Native, TypeScript, Redux, Java, Kafka, detox

- Led development of the credit card section of Zopa's app in React Native and Redux.
- Wrote native modules in Swift and Kotlin against Stripe's card issuing API while it was brand new and its documentation incomplete, translating Objective-C into Swift without knowing either language beforehand.
- Learned the credit products well enough to work directly with analysts and backend engineers, and contributed backend fixes.

open source

Handwritten the old way, or architected by hand and written with AI: everything I make is there for anyone with the curiosity to look.

Created

- nano-web Rust · 240+ stars: static file server that compresses every possible response ahead of time, so serving one is handing the kernel a buffer. It serves this site.
- jaritanet TypeScript: production-grade declarative infrastructure for my own services as one Pulumi stack, which builds a k3s cluster on a VPS and deploys into it in the same run, with no secret leaving the stack. Previewed on pull request, applied on merge, and it opens its own version bumps.
- kōan Rust/Swift/Kotlin · source: music player and server. One Rust core linked into native SwiftUI and Android apps, a terminal UI and a server; per-output room correction, DLNA, playback handed between devices, and full OpenSubsonic compatibility.
- GrogLog Rust/Swift/Kotlin · source: a free drink tracker for people cutting down, with no account, adverts or server. Reduction plans within UK clinical guidance and Apple Health data against the night before, on a Rust core shared by the iOS and Android apps.
- **MCP servers in Rust**: fastmail-cli 75+ stars, which predates Fastmail's official MCP and does more, tfl-mcp, caldav-cli and mainlynorfolk-mcp, sharing a GraphQL transport I designed: one typed graph instead of a sprawl of flat tools, so a model asks for exactly the fields it needs, spends far fewer tokens, and can read why a query failed. mcp-gateway runs the OAuth flow and injects per-user secrets so they work as Claude connectors.
- watchwoman Rust: a drop-in watchman replacement that doesn't eat your RAM.
- blit.cc Rust: this site. A static site generator with a content-hashed asset pipeline and a gettext implementation for Askama, 36 locales with plural rules checked against CLDR at build time. The browser gets HTML, CSS and a font, and the PDF is typeset at build time.

- **Earlier**: xr 440+ stars, a tiny XMLHttpRequest wrapper from before fetch, and Ham 380+ stars, a PHP microframework from when that was a reasonable thing to write.

Contributed

- pip: #789, SSL certificate verification, carried into #791 and shipped in pip 1.3 as the fix for CVE-2013-1629.
- **Elsewhere**: TanStack Router (static prerendering), Django REST Framework (timedelta in the JSON encoder), icu_ex (compact and percent number formatting for Elixir), go-buildpack (Go version from go.mod), ops (unikernel packaging), git-absorb, react-native-webview, sorl-thumbnail, bowser.

skills

AI is changing how we learn and build with things - I've tried to be honest here about tools I could use without LLM assistance. However, *for instance*, I use Rust for my personal projects as I know enough about it to maintain it, review it, and spot if LLMs have done something hideous or worked their way into an antipattern.

Daily: TypeScript, Elixir, GraphQL, Node.js, PostgreSQL, React, Next.js, Docker, Git, GitHub Actions, Tailwind, CSS, bash/zsh, Linux, Pulumi, Vite, Zustand, agentic AI tooling and MCPs.

Strong: Go, Python, React Native, gRPC and Protobuf, Kubernetes, Astro, Terraform, AWS (CDK, Lambda, API Gateway, DynamoDB, S3, CloudFront, Cognito, ECS/Fargate, RDS, IAM, Route53, SQS, SES, CloudWatch), Redis, Memcached, Zod, esbuild, bun, MobX-State-Tree, Redux, RxJS, WebSockets, Kafka, i18n, TDD/BDD.

Worked with: Rust, NestJS, Express, Swift, Java, Kotlin, Django, Flask, Celery, Cython, Twisted, MySQL, MSSQL, MongoDB, CouchDB, Couchbase, ArgoCD, Ansible, Azure and Azure Policy, Concourse, CircleCI, BitBucket Pipelines, GitLab CI, Traefik, Nginx, Apache, ZeroMQ, Socket.IO, C#, .NET, C++, C, x86 assembly, Qt, PHP, AngularJS, jQuery, SASS/LESS, Cloud Foundry, BOSH, Mesos/Marathon, unikernels, and many, many more…

education

Computer Science & Cybernetics, University of Reading

- Completed two years and won a competition for my embedded systems work in the second, then left to start working. I learn best by building, and freelancing gave me more hands-on experience than lectures did.

who is james?

Computers aren't a job I go to. They're part of how I'm built. I shoot photography, street portraits mostly these days, which began as urban exploration in Berlin and slowly turned the lens on the people. I cycle, and I care about the freedom it gives people. Music and audio matter to me. I go out of my way to find weird little bands nobody has told me about yet, and I would rather wander into somewhere and talk to a person than have an algorithm hand it to me. I still think technology can be the thing that gives you back control of your own existence, and people are starting to notice. So I run my own homelab and my own music collection, and I built my own audio player, because nothing this close to the heart should live at the pleasure of a large corporation. Everyone should have a choice.

I follow current affairs closely, especially where the technology is.

less recent work

Senior Frontend Developer, On The Dot (formerly LastMileLink) 2017-2018

Key Skills: React, TypeScript, Redux, redux-observable, Go, Node.js, AWS Lambda, API Gateway, Apigee, Auth0, Swagger

- Part of the team that owned the frontend, mainly the allocation UI that controllers used to assign deliveries and bookings to couriers.
- Helped refactor the whole codebase onto React 16, Redux and redux-observable for side effects.
- Started taking on backend projects there, and took ownership of authentication (Auth0), authorisation (Lambda and JWT), user management, and automated API aggregation across Swagger, API Gateway and Apigee.

Lead Frontend Developer, SmartFocus 2015-2017

Key Skills: React, AngularJS, Redux, flux, Node.js, Express, WebSockets, ZeroMQ, Redis, C++, C#, .NET, Qt

- Lead engineer in the innovation and frontend teams at a London marketing technology company, building and rebuilding a large share of the frontend code and internal services.
- Architected and built three of their core products, shipped and forthcoming, in React, Redux and Node.js, and mentored the other engineers on them.
- Set patterns and practices that the wider technical team adopted.
- Took on database architecture, system design, and UX and product design wherever a problem needed it, learning whatever else it took.

Lead Frontend Developer, Bootbag 2014-2015

Key Skills: React, flux, WebSockets, CSS, HTML

- Prototyped and built a startup's frontend in React, early enough that most of the patterns didn't exist yet.

Technical Director, Links Creative 2013-2015

Key Skills: Django, PHP, AngularJS, jQuery, Node.js, Express, C#, .NET, Linux, nginx

- Technical director of a small Brighton agency. Mostly Django, AngularJS, jQuery and PHP, taking projects from ideas in clients' heads to fully developed products.

Web Developer, Freelance 2010-2013

Key Skills: PHP, Django, Flask, AngularJS, jQuery, Node.js, Linux, nginx, Apache

- Moved to Brighton and dropped myself in the deep end, learning to network, manage projects, and lean on technical skills that were improving as fast as the work demanded.

Web Developer, Primrose London 2009-2010

Key Skills: PHP, Linux, Active Directory, Git

- PHP and systems administration. Integrated the Linux servers with Active Directory and set up version control with Git.

PHP Developer / Sysadmin, The Escape Committee 2007-2009

Key Skills: PHP, MySQL, Gentoo, Linux, Apache, Asterisk

- Web development and systems administration, including working out the Asterisk phone systems.