

Maximilian Hale

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Experience

Contract Fullstack Engineer | CapEnergy

Jan 2026 - Jun 2026

Appliance-level energy monitoring serving the world's largest hospitality companies

- Led the migration of over 500 million energy data points onto a new event-sourced architecture, redesigning core persistence and processing workflows to improve scalability, auditability, and long-term platform resilience.
- Implemented full end-to-end testing for the customer web portal used by global hospitality brands including Burger King and Chipotle, building the entire production test suite from scratch and embedding it into the CI/CD pipeline.
- Modernised a multi-product engineering stack spanning .NET, F#, C#, and TypeScript/JavaScript systems, improving code maintainability, reducing technical debt, and increasing delivery velocity across both customer-facing and internal platforms.
- Refactored and incrementally replaced legacy codebases, introducing stronger engineering standards, improved automated test coverage, and a more extensible foundation for future product development.
- Improved the internal admin portal by streamlining workflows for operational stakeholders, partnering closely with operations, product, and engineering team members to ship robust features that reduced friction in day-to-day platform operations.

Co-Founder and Founding Fullstack Engineer | Meritt

Nov 2024 - Mar 2026

A sales hiring platform using video, automation, and AI to help startups and agencies hire faster.

- As the founding engineer, architected the entire SaaS platform from the ground up, defining the end-to-end technical strategy, architecture, and reliability standards that enabled the system to scale from 0 to over 20,000 users with 99.9% uptime.
- Owned 24/7 on-call operations as the sole reliability engineer. Established a comprehensive observability stack using Better Stack, Sentry, and PostHog, enabling sub-5-minute median incident response times and real-time visibility into platform health via SLO/SLA tracking.
- Engineered and optimised a large-scale semantic vector search system using pgVector, custom embedding models, and LLM-based re-ranking. This delivered sub-second retrieval across a dataset of over 1 million candidate profiles, allowing recruiters to source qualified talent 70% faster.
- Built a secure, from-scratch authentication platform supporting both password and OAuth (Google, LinkedIn) logins. The system, built on Next.js and PostgreSQL with bcrypt hashing and RBAC, improved signup conversion by approximately 40% while maintaining 99.9% uptime.
- Championed and implemented a Clean, Hexagonal architecture that enforced strict coding standards and test isolation. Automated the entire CI/CD pipeline with GitHub Actions, reducing deployment time from 20 minutes to under 5 minutes and enabling multiple production releases per day with confidence.
- Transitioned out of the business following a founder buyout, after establishing the technical architecture, reliability practices, and product foundations that enabled the platform to scale successfully.

Education

MPhys in Physics (Integrated Master's) | University of St Andrews

Graduated 2025

- Master's thesis: "Beam Shaping for Information Transfer", designed and executed experiments and simulations on vortex and vector laser beams for high-efficiency optical communication, exploring how advanced beam shaping can improve data transfer speed and noise resilience.

Technical Stack

- **Languages:** TypeScript, JavaScript (Node.js), Python, SQL, Java, Fortran, C#, F#
- **Backend:** FastAPI, Express.js, Spring Boot, Dotnet, Kafka, REST APIs, GraphQL
- **Frontend:** Next.js, Nuxt.js, React, Vue, Angular, Tailwind
- **Databases & Data Stores:** PostgreSQL, Marten, Redis, pgVector, Prisma ORM, Drizzle ORM
- **Cloud & Infrastructure:** AWS (S3, ECS, EC2, RDS), Vercel, GCP, Azure, Docker, GitHub Actions (CI/CD)
- **Testing & Observability:** Jest, Playwright, Sentry, BetterStack, PostHog, Honeycomb

Projects & Interests

- **Applied Physics:** Build physics simulations in Fortran and C to explore complex theoretical concepts from my academic studies in a practical coding context.
- **Music:** Playing the guitar, drums and piano!