

# Alexander Halford (MSci., ARCS)

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## Chief Technology Officer & Principal Architect

Strategic technology leader with a background in Physics and complex distributed systems, specialising in large-scale digital transformations and high-integrity architecture. Operates fluently across C-suite strategy, creative vision, and hands-on engineering execution.

### Core Competencies

#### Strategic Leadership

- Tech Transformation: Leading legacy-to-cloud shifts.
- Team Scaling: Hiring, mentoring, and culture development.
- Stakeholders: C-suite advisory and technical strategy.
- Velocity: Accelerating development via AI-augmented engineering.

#### Systems Architecture

- Distributed Systems: Microservices, Event-Driven, Serverless.
- High-Integrity Design: Complex, auditable data pipelines.
- Security: Strict IAM, SOC2 readiness, Local-First paradigms.
- Automation: Custom CI/CD, ETL, and automated workflows.

#### Technical Proficiency

- Languages: Python, Rust, Go, JS/TypeScript, Typst.
- Frameworks: Django, FastAPI, React, NextJS, Tailwind.
- Cloud/Infra: AWS, Azure, GCP, Terraform.
- Data: SQL (PostgreSQL, EdgeDB), NoSQL (Firestore, MongoDB), Cache (Redis, Elasticache).
- Tools: Datadog, Prometheus, Stripe, OpenAPI.

### Independent Architecture & Publications

#### 2024 – Present: Author & Technical Architect – Automated Publishing & Fulfilment Platform

Authored the surrealist novel *Venus In Chains* (alexanderhalford.co.uk) and engineered a bespoke, fully automated sales and fulfilment architecture to manage distribution independently.

- Architected a serverless, event-driven sales and distribution backend on NextJS with Google Cloud (Firebase, Cloud Functions, Firestore) to fully automate payment processing, international shipping (including automated customs documentation), templated customer emails, and the delivery of digital assets.
- Engineered the stack to operate entirely within Firebase's free tier, with headroom to handle an estimated 1,000 orders/day at zero infrastructure cost.
- Created a fully automated rendering pipeline (Python + Typst) to generate print-ready files and eBooks from source code.
- Implemented a system to inject live, customer-specific social DRM into eBooks at purchase time to secure intellectual property.
- Created a B2B portal to allow brick-and-mortar bookshops to request stock and log sales, with automated monthly invoice generation, complete with a one-click Stripe payment link.
- Built a cross-platform mobile app (Flutter) as a control surface for the platform, providing on-the-go monitoring and operation of the live system – a deliberate investment in operability over ad-hoc administration.

### Professional Experience

#### May 2025 – Present: Senior Technical Consultant at GBST Wealth Management Ltd.

Directing the technical transformation of legacy pension management platforms (Aegon, Halifax, Scottish Widows), translating C-suite business requirements into high-integrity architectural blueprints.

- Leading greenfield architectural design for a Tier 1 financial institution (Halifax).
- Technologies: Java/Springboot, Javascript/React/EmberJS.

## 2024 – Present: Director – New Crane Wharf Freehold Limited

On the board of the company that owns the freehold of a 24-hour portered, high-security residential building, where directors collectively set and allocate a c. £1M annual operating budget. Lead technology strategy across the building – CCTV, access-control, intercom and network infrastructure.

## Sept 2023 – Oct 2024: Client Solutions Architect at 10X Banking Ltd.

Architected the integration layer between 10X's core banking software and multinational client systems (e.g., J.P. Morgan), facilitating pre-sales PoCs through to full-scale deployment.

- Technologies: Golang, PostgreSQL, Pulumi, RPC, Protobuf.

## May 2022 – Sept 2023: Principal Architect at Luna Protocol Ltd.

Spearheaded engineering org growth and the architectural design of an automated financial contract execution engine.

- Org Scaling: Led hiring and player-coach mentorship, doubling the engineering team from 3 to 6.
- Strategy: Directed the delivery of a mission-critical loan origination system for Aqua Finance, one of the largest home-improvement lenders in the US (c. \$2bn in annual originations).
- Technologies: Azure, Python/Django, FastAPI, Go, EdgeDB, Pulumi, Rust, RPC.

## Sept 2019 – May 2022: Senior Developer & Principal Architect at Yobota Ltd.

- Transformation: Orchestrated the strategic migration from a legacy monolith to a domain-oriented service architecture, taking releases from a quarterly cadence – typically requiring live production hot-patching – to stable daily deployments.
- Security & SOC2: Led technical readiness for SOC2 Type II compliance, establishing the control frameworks required for Tier 1 banking partnerships in six months.
- Audit: Re-engineered CI/CD and release protocols to ensure 100% traceability and automated evidence collection.
- Innovation: Implemented a full-stack solution to manage release batching, automated testing, deployment sign-off, and audit visibility, used by all staff.
- Leadership: Grew the architecture team from 1 to 4; managed back-end teams with a focus on career growth.
- Technologies: Python/Django/Celery, JS/React, PostgreSQL, AWS/Fargate, Terraform, Jenkins.

## 2013 – 2019: Earlier Experience

- Protean Capital** (Head of Technology, contract): real-time financial data delivery (WebSockets, Django Channels) for a fund managing c. £500M AUM.
- Regents Partners** (Lead Developer, contract): property-management web systems and custom smart-home automation.
- Dstl (MoD)**: mission-critical real-time ETL pipelines for sensor-data classification.
- PlebiSite** (Founder): political polling startup.
- Mongoose Gray / Staffably**: data-scraping and chatbot solutions for operational efficiency.

### Education & Qualifications

- Master in Science (Hons.) Physics (2.1), Imperial College London.
- Associateship of the Royal College of Science (ARCS).
- A-Levels: Mathematics, Further Mathematics, Physics, Chemistry.

### Languages

- Native: English, Italian.
- Intermediate: French, Russian, Spanish.

### Interests

- Published Surrealist Novelist
- Python Mentor (Exercism)
- Member of Chatham House
- Argentine Tango
- Martial Arts
- Piano