

David Lyon

CTO | Platform Recovery Specialist | SaaS Infra Architect | AI-Enabled Systems Builder

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Professional Summary

Chief Technology Officer with 15+ years of cross-Atlantic experience stabilising critical platforms, scaling SaaS products, and leading incident-driven transformation. Trusted to step in when systems break, time runs out, or leadership needs to make technical risk visible — fast.

Delivered £4.5M+ in first-year SaaS revenue, reduced infrastructure costs by 25%, and restored production resilience with sub-1hr MTTR and 99.99% uptime under pressure. Recently uncovered and published a silent AWS Lambda runtime crash in Node.js/VPC workloads — later confirmed by AWS — through deep-stack diagnostics, Docker isolation, and forensic analysis beyond the reach of standard tooling.

Whether building from zero, recovering at scale, or embedding resilience into fragile systems, I lead with clarity, velocity, and technical precision. Open to CTO, Head of Engineering, or Fractional roles — especially where high stakes, platform complexity, or turnaround pressure demand proven hands-on leadership.

Technology Leadership Summary

Strategic Leadership

- Technical vision aligned with growth, GTM, and board priorities
- SaaS scaling, revenue enablement, and platform commercialisation
- AI/ML systems architecture and cross-cloud transformation
- Security-first leadership: Zero Trust, threat mitigation, CISSP/OSCP certified

Engineering & Architecture

- Multi-cloud infrastructure design (AWS, Azure, GCP)
- Full-stack debugging and platform forensics (X-Ray, kernel, CI/CD)
- HA/DR architecture, observability pipelines, and service recovery logic
- CI/CD systems engineered for speed, isolation, and rollback safety

High-Stakes Delivery

- Led 200+ critical incident responses with sub-1hr MTTR
- Platform-level fault resolution in production-grade systems
- Executive-facing technical advocacy and high-trust mentorship
- Cloud migrations, infra rebuilds, and digital transformation under pressure

Career History

Private SaaS/AI Consultancy (UK/US)**Chief Technology Officer**

(2023 – Current)

Fractional CTO leading mission-critical engineering across HealthTech, FinTech, and AI startups. Delivering resilient platform architecture, hands-on cloud strategy, and production-grade recovery from crisis to scaleout.

Key Achievements

- Exposed and published a confirmed **AWS Lambda runtime failure** (Node.js in VPC) — silently crashing workloads post-request. Outdiagnosed L5 AWS engineers using Docker-based rebuilds, AL2023 parity, and deep forensic isolation. Case study cited on Dev.to, Hashnode, and HackerNews.
- Delivered **£4.5M+ in first-year client revenue** via full-stack SaaS launches across AI/ML, finance, and healthcare.

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- Cut cloud costs **25%+** by rearchitecting monoliths into **modular, cloud-native platforms** (AWS, Azure, GCP).
- Directed **200+ critical incident recoveries**, achieving sub-1hr MTTR and 99.99% uptime under pressure.
- Built remote-first engineering teams; embedded **CI/CD resilience**, tactical DR patterns, and full-stack debugging playbooks.
- Mentored CTOs and tech leads on **platform stability, AI scaleout, and cloud migrations**.
- Developed a **self-healing Kubernetes platform** with auto-recovery, service orchestration, and node resilience.
- Debugged **high-frequency fintech anomalies**, pinpointing integrity failures in external payment chains.
- Designed **event-streaming pipelines** with cross-AZ failover and multi-path redundancy.
- Supported a **30× traffic surge** during a national product launch with zero downtime.
- Led **security hardening sprints**, full access audits, and active-response reinforcement post-incident.

Dumfries and Galloway Housing Partnership – Edinburgh, UK

Chief Technology Officer

(2021 – 2023)

CTO driving DevOps evolution, full-stack architecture, and operational resilience for high-growth, production-critical SaaS platforms. Modernised infrastructure, scaled remote teams, and embedded secure, high-velocity delivery across AWS, Azure, and hybrid stacks.

Key Achievements

- Led a £1.8M SaaS modernisation programme, increasing uptime by 30% and cutting OpEx 20% through pipeline acceleration and architectural redesign.
- Built and scaled remote DevOps squads, implementing Kubernetes, Terraform, and serverless stacks to achieve 5× deployment velocity while maintaining full regulatory compliance.
- Architected multi-cloud HA infrastructure (AWS + Azure) with DR-first principles, reducing MTTR by 40%.
- Directed 100+ production incidents with embedded tactical debugging playbooks, lowering outage impact by 35%.
- Aligned cloud and cybersecurity strategy with organisational growth, partnering directly with C-suite stakeholders.
- Designed and validated a multi-region disaster recovery strategy, with RTO/RPO thresholds confirmed via simulated failovers.

Datavant – San Francisco, CA

VP of Engineering and AI

(2017 – 2021)

Led engineering, AI/ML innovation, and cloud platform scaleout during a period of rapid growth for a data-centric SaaS provider. Owned end-to-end technical strategy spanning product, infrastructure, and resilience, with global 24/7 operational responsibility.

Key Achievements

- Scaled engineering from 10 to 60+, embedding mentorship frameworks and accelerating delivery velocity across distributed teams.
- Developed and deployed AI/ML-powered features, including real-time analytics, recommendation engines, and predictive resilience systems.
- Directed multi-phase AWS migration, reducing infrastructure spend by 35% and improving performance by 45%.
- Integrated DevSecOps practices, cutting vulnerability exposure by over 60% and hardening platform security posture.
- Architected full-stack, high-resilience SaaS platforms, achieving 99.95% uptime across global operations.
- Partnered with executive leadership to align technology roadmaps with revenue strategy, product evolution, and market expansion.

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Earlier Career

- Director of Software Engineering | Mount Sinai Health System | 2013–2017
 - Led multi-site EHR integration and critical care system modernisation under HIPAA constraints. Rebuilt full-stack clinical platforms and aligned CI/CD pipelines with regulatory, clinical, and operational requirements.
- Senior Solutions Architect | Human and Molecular Genetics Center | 2011–2013
 - Designed high-availability genomic data systems and deployed early AI/ML models for molecular pattern recognition, enabling secure, large-scale research with strict latency and compliance thresholds.
- Lead DevOps Engineer | CompUSA | 2009–2011
 - Diagnosed silent I/O failures in legacy fibre-channel SANs and stabilised critical infrastructure under late-stage degradation. Led infrastructure triage and recovery during system collapse scenarios.
- Software Engineer | Fujitsu Services | 2007–2009
 - Engineered enterprise platforms and prototyped early AI systems using expert rules and neural networks. Delivered predictive diagnostics and automation enhancements that informed long-term fault-tolerant architectures.

Publications & Thought Leadership

- Lead Author, "[The Hidden AWS Lambda Crash: Node.js, VPC & The Silent Killer](#)" – Deep-stack diagnostic report confirmed by AWS.
- Lead Author, "[The Fibre Split: Leading Through Hardware Silence](#)" – Retrospective on invisible hardware degradation & leadership lessons.

Education

- **Heriot-Watt University**, Edinburgh, UK
Ph.D., Artificial Intelligence and Neural Networks (2006)
Thesis: Optimising Neural Network Architectures for Fault Tolerance and Adaptive Learning in Dynamic Environments
- *MSc, Software Engineering (AI & Neural Systems), Summa Cum Laude*
- **New York Law School**, New York, USA
Juris Doctor (JD) – Focus: Cybersecurity frameworks, technology law, IP rights (2017)
 - *providing deep governance and data privacy expertise in regulated AI environments.*

Industry Certifications

- **Executive Leadership:** Certified Chief Technology Officer (CCTO), Certified IT Professional (CITP)
- **Cloud & Security:** CISSP, CCSP, OSCP, CEH, CHFI
- **Project & Delivery:** PMP, Certified Scrum Master (CSM)
- **Emerging Tech:** Certified AI Scientist (*Institution: United States Artificial Intelligence Institute*)

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