

# Marc Lally

Senior Software Engineer | Platform & Architecture Lead

Distributed Systems | Serverless | TypeScript/Node

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Book a Meeting

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Senior Engineer with a track record of defining, scaling, and operating distributed systems in high-throughput production environments. Recognized for setting technical direction across teams, translating business constraints into durable architectures and driving platform-level decisions. Extensive experience designing service-oriented and serverless systems handling millions of requests, with deep expertise in API design, data modeling, cloud-native infrastructure, and performance-critical components implemented in JavaScript/TypeScript mostly with some Python, and Rust.

Architect and technical authority building distributed systems handling millions of requests in production. Drive platform strategy across multi-disciplinary teams, translating complex business constraints into scalable, fault-tolerant architectures. Deep expertise in service-oriented and serverless design, data systems optimization, API contracts, and cost-efficient cloud infrastructure. Hands-on with TypeScript/Node, Python, and Rust—deliberately selecting the right tool for performance, security, and long-term maintainability. Demonstrated track record elevating engineering standards, mentoring technical leaders, and delivering systems that scale reliably while remaining operationally sustainable.

## Technical Scope & Impact

Define and evolve large-scale distributed systems, making architectural decisions that optimize for scalability, reliability, cost efficiency, and developer velocity. Lead the design of service-oriented and serverless architectures with explicit attention to: clear service boundaries, data ownership and consistency models, inter-service communication patterns, and operational visibility. Establish organization-wide API design standards using REST and GraphQL, with rigorous governance around versioning, backward compatibility, contract clarity, and discoverability. Code at the level where it materially impacts correctness, performance, or future maintainability—leveraging TypeScript/Node for rapid iteration, Python for data systems and scripting, and Rust for performance-critical, resource-constrained components. Lead technical design reviews and code reviews to elevate architectural thinking and catch systemic issues early.

Own data architecture decisions across SQL (PostgreSQL, MySQL) and NoSQL systems (DynamoDB, MongoDB, Redis), including schema design, indexing strategies, and access patterns that support high-throughput, low-latency workloads. Guide teams through consistency trade-offs, handle complex schema migrations, and architect for long-term data evolution without breaking changes. Design and standardize AWS-native platforms leveraging Lambda, API Gateway, DynamoDB, S3, EC2, and Cognito, with infrastructure as code via Terraform and CloudFormation. Establish observability frameworks (structured logging, metrics, traces), alerting strategies, and cost governance models to ensure systems are production-ready, measurable, and economically sustainable at scale. Define CI/CD expectations and deployment safety practices, advocating for test-driven development and production readiness as non-negotiable standards. Embed authentication and authorization as first-class architecture concerns using OAuth 2.0, JWT, and OpenID Connect. Standardize API contracts and documentation through OpenAPI to reduce integration friction. Partner with security and compliance teams to embed controls at the platform level, not retrofit at the application layer.

## Leadership

Operate as technical authority across multiple teams, driving architectural direction and influencing roadmap priorities through data-driven technical strategy and clear decision frameworks. Mentor senior engineers and emerging technical leads—elevating decision quality, establishing shared architectural principles, and developing the next generation of technical leaders. Bridge engineering leadership, product, and business stakeholders, translating ambiguous requirements and competitive constraints into coherent technical direction and credible delivery plans. Focus on enabling teams to move at velocity without sacrificing system integrity, ensuring short-term tactical decisions align with long-term platform health and organizational scalability.

UCL University College London - B.Sc. Computer Science (Hons) 2:1 (1990-1993)  
Certified AWS Solutions Architect Associate (2023)  
Certified AWS Developer Associate (2023)

## EXPERIENCE

### UK Ministry of Defence

February 2025 - November 2025

### Senior Backend Engineer

(NDA-protected work) Architected and deployed scalable, secure, high-availability backend services handling mission-critical workloads. Designed low-latency core services using Node.js, TypeScript, and serverless technologies with stringent data protection via OAuth 2.0 and JWT. Established and enforced test-driven development practices across teams. Optimized application performance and reliability through systematic refactoring and careful integration of specialized tools and libraries. Defined security and architectural standards for authentication, data access control, and service communication patterns.

### Codeium

January 2024 - December 2024

### Senior Full Stack Developer | Tech Lead

Led platform-wide technical initiatives across frontend and backend systems. Architected React-based user experiences with performance and accessibility as first-class concerns. Designed and implemented backend services supporting millions of user interactions. Established coding standards, design patterns, and architectural principles across teams. Drove adoption of modern tooling and practices to improve developer productivity and system reliability. Mentored engineers on systems thinking and elevated overall engineering maturity.

### made.com

March 2023 - December 2023

### Senior Backend Developer

Designed and deployed distributed, low-latency, highly available systems handling high request volumes. Architected security-first applications with encryption, fine-grained access control, OAuth 2.0, and JWT-based authentication. Optimized data storage solutions and database schemas for performance and scalability. Drove CI/CD best practices, automated testing standards, and rigorous code review processes across teams. Established security benchmarks and compliance frameworks for production workloads. Translated business requirements into robust, maintainable system architectures.

### Shell Global Energy

July 2022 - February 2023

### Senior Backend Developer

Architected and built scalable Node.js and serverless APIs supporting high-throughput energy systems and data platforms. Led technical design and conceptualization of complex backend systems, collaborating with cross-functional stakeholders to translate business objectives into coherent technical strategy. Designed data-driven information architectures supporting real-time analytics and reporting. Established coding standards and architectural patterns to improve code quality, testability, and long-term maintainability. Mentored engineers on systems thinking and best practices. Ensured all components met exacting specifications and reliability standards.

### Studio Rotate

June 2021 - July 2022

### Senior Backend Developer | Tech Lead

Led cross-functional engineering teams to deliver high-impact digital products. Drove technical excellence and modern practices across the software development lifecycle. Designed robust information architectures and integrated advanced data storage solutions supporting scalability and performance. Solved complex architectural challenges and championed platform-level decisions. Collaborated with product, design, and business teams to translate requirements into reliable technical strategies. Elevated team capabilities through mentorship and architectural guidance.

### Sainsburys Digital

December 2020 - June 2021

### Senior Backend Developer | Tech Lead

Led systematic refactoring and optimization of critical codebases using rigorous design patterns and architectural best practices. Architected middleware solutions leveraging GraphQL and Next.js to integrate with Google DV360 advertising platform, enabling efficient real-time data querying and service interoperability at scale. Established test-driven development standards across teams, ensuring high code quality, early defect detection, and reliable deployments. Built reusable, modular systems that scaled with business requirements. Mentored engineers and elevated technical standards across the organization.

### KFC Europe

December 2019- November 2020

### Senior Fullstack Developer | Tech Lead

Led cross-functional technical teams spanning mobile, backend, frontend, and infrastructure to deliver mission-critical systems. Architected and deployed complex integrations between digital ordering platforms, point-of-sale systems, payment processors, and fulfillment networks. Designed for reliability and performance across hundreds of locations. Established architectural standards and mentored engineers across disciplines. Drove alignment between technical strategy and business objectives, ensuring systems scaled reliably with rapid business growth.