James McMahon

Chief Technology Officer

james@jamesmcmahon.co.uk | ScottishTapWater | jsmcmahon

Profile

I'm a Chief Technology Officer with a background spanning control systems engineering, software development, consultancy and technical leadership. I've worked across a range of industries and stages of business, from delivering and modernising established platforms to building an engineering function around an emerging product.

My work brings together technology, people and commercial decisions. Alongside setting technical direction, I've built teams, worked with customers to understand their needs, contributed to pricing and commercial partnerships, and shaped company policies and employment practices. My engineering background gives me the depth to challenge assumptions, assess trade-offs and stay involved where it makes a useful difference.

I believe people do their best work when they are trusted, supported and given clear ownership. I want that reflected in how an organisation operates: managers empowered to exercise judgment, processes that help people deliver, and fair, humane treatment when things go wrong.

Experience

GoSim *Remote, UK*

Chief Technology Officer *September 2026 - Present*

I joined GoSim to build its engineering function and lead the technical strategy for taking its motor design and optimisation software from prototype to commercial product. I work with the CEO and senior stakeholders at customer organisations on product direction, commercial strategy and the organisation needed to deliver it.

- Defined the approach to building and scaling the engineering organisation, starting with a lean founding team and planning its evolution into cross-functional teams. Completed the founding engineer hires and negotiated improved recruitment terms.
- Collaborated with the CEO to define seat-plus-usage pricing for hosted computation, allowing parallelism to be driven by engineering decisions and faster customer results without additional per-core licences.
- Work directly with senior stakeholders at customer organisations to understand their requirements and operating constraints, informing product direction and support for local, hosted and on-premises computation.
- Defined the technical strategy and delivery roadmap for the first commercial release. Evaluated key decisions through prototypes and benchmarks, establishing an architecture that allows the application, numerical methods and compute infrastructure to evolve independently.
- Established direct relationships with AWS technical account management and solution architecture, and a collaboration with Blacksmith on a potential reproducible benchmarking capability.
- Defined a data-minimisation approach favouring transient processing and anonymisation. Introduced retention controls and restricted access for sensitive company records using Microsoft Purview and SharePoint.
- Authored company policies and revised employment contracts to embed trust, employee wellbeing and balanced protections, empowering managers to support individual circumstances and address problems fairly.

FinLegal

Sheffield, UK

Technical Lead - AI and Core

September 2024 - September 2026

Technologies: C#, .NET 10, Blazor, React, Amazon Bedrock, AWS (ECS, Lambda, EventBridge, Textract)

Reporting to the CTO, I owned architecture and delivery across AI and Core. I worked closely with the CEO on business and technical strategy, investor presentations and customer pitches.

- Led the incremental rearchitecture of the onboarding framework, replacing hour-long releases with automated, zero-downtime deployments and isolating site failures. Retained the cost efficiency of shared hosting across hundreds of sites handling hundreds of thousands of registrations per hour.
- Designed and led delivery of the AI product suite from concept to implementation, including a bespoke multi-agent framework and scalable OCR orchestration. The offering had more than 50 paying customers by my departure in September 2026.
- Defined a sustainable AI-first engineering strategy covering the technology roadmap, resourcing and organisational transformation.
- Created a repeatable framework for evaluating AI outputs, supporting calibration and validation as the systems evolved.
- Defined the anonymisation and data security policy and implementation plan for AI data.
- One AI system I designed was being prepared for patent filing when I left.
- Adapted the legacy core to integrate with new services, designing SDKs and authoring architectural guidance to help teams adopt asynchronous patterns.
- Authored company-wide standards, including the AI-augmented engineering policy.

Spektrix

Manchester, UK

Technical Lead

December 2022 - July 2024

Technologies: C#, .NET 8, .NET Framework (Legacy), ASP.NET, gRPC, Terraform, MS SQL, Cosmos DB, Azure, ServiceBus

I led a team of up to ten engineers on a complex overhaul and modernisation of our systems, working closely with the principal engineer and other tech leads on the overall architectural direction.

- Collaborated on the architecture for migrating a WebForms and .NET 3 monolith to cloud-native services, and led delivery within my team's domains. The resulting system handled traffic surges of hundreds of thousands of users whilst scaling back to zero when not needed.
- Helped define domain boundaries and separate the monolith into services owned by new teams, incorporating modernisation work into the technical roadmap alongside business priorities.
- Designed and led the overhaul of the client data import tool, enabling imports directly into production without an intermediate environment. This required a 50× speed increase.
- Defined an automated smoke-testing strategy that replaced manual approval gates and enabled continuous deployment, subsequently adopted across the business.
- Reworked performance-critical code to make effective use of multithreading and asynchronous execution.

Various Companies

UK, Remote

Software Engineering, Leadership and Consultancy Roles

December 2020 - December 2022

Technologies: C#, .NET, Java, Go, TypeScript, Angular, React, Flutter, AWS, Azure, GCP, Docker, Kubernetes, Kafka, SQL

- Led engineering teams through the full product lifecycle, combining technical direction with line management and mentoring developers from apprentice to senior level.
- Worked across consultancy presales and client delivery, identifying customer needs, developing proposals and co-leading delivery of a telematics platform with a high-volume API, parallel data processing and a mobile application.
- Developed and maintained software across financial services, betting and safety management, providing technical guidance and driving improvements to existing platforms.

Schneider Electric Systems

Crawley, UK

Control Systems Engineer

July 2016 - December 2020

Technologies: Foxboro DCS, Triconex SIF, C#, C(++), WPF, Blazor, Angular, WinAPI, HLBL

I held various engineering roles whilst at Schneider Electric, all within the process automation business unit. I was involved in many large projects developing integrated control and safety systems for our clients. On top of this, I spent a significant amount of time developing software packages for both internal and customer use.

Education

Aston University *Birmingham, UK*

Master of Philosophy (MPhil) - Engineering Systems *June 2021 - Ongoing*

Thesis: Orbital Environment Monitoring and Long-Term Simulation

- Developed and open-sourced tools for accessing, aggregating and analysing orbital data from DISCOSweb, SpaceTrack and CelesTrak. Used them to analyse the orbital environment and cross-reference findings with the European Space Agency's annual report.
- Critically evaluated orbital propagation and collision modelling methods, identifying limitations and proposing a programme of work for a long-term simulation to evaluate debris mitigation techniques.

Aston University *Birmingham, UK*

Bachelor of Engineering (Hons) - Embedded Digital Electronic Systems Design and Development *September 2017 - March 2021*

Classification: 1st Class with Honours

Dissertation: He Plays Dice: The Development of a High-Bitrate Quantum Random Number Generator for High-Security Cryptographic Applications.

Areas of Study: Digital and Analogue Electronics, Embedded Software Development in C and C++, Digital Systems Design in VHDL.

Awards: Best Final Year Project

Skegness Grammar School *Skegness, UK*

A Levels *September 2014 - June 2016*

Mathematics	A	**Physics**	A	**Computing**	A

Advisory

Croissant *UK, Remote*

Technical Advisor *April 2025 - Present*

Advisory board member for an AI-powered employee engagement SaaS platform, providing guidance on architecture and technical strategy.

Volunteering

Arkwright Scholarship Trust *London, UK*

Industry Mentor *September 2018 - Present*

As an industry mentor, I'm paired with Arkwright Scholars to help provide them with guidance and advice over the period of their scholarships. This includes:

- Technical assistance with projects.
- Guidance on university applications.
- Organising work experience (where possible).
- Any other guidance that may be needed.

Open Source

xUnit.Analyzers	Contributed multi-code fixers to the xUnit testing framework's Roslyn analysers
TFT Dash	Rearchitecting a commercially available aftermarket motorcycle dashboard display and transcoder
ArchonAnalysers	Roslyn analysers for enforcing architectural rules (8.4k downloads)
SuperFluid	Roslyn source generator for building fluent APIs (5.7k downloads)
Lazarus	Bulletproof BackgroundService with auto-resurrection and heartbeat monitoring (2.4k downloads)
Orbital Data SDKs	DISCOSweb, SpaceTrack, CelesTrak – C# SDKs for orbital data acquisition (49.6k combined downloads)
PgfPlotsSdk	Library for generating PgfPlots LaTeX from C# (12.4k downloads)

NuGet download counts accurate as of November 2026