

Calum Mortimer MEng MSc

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Professional Summary

I am a highly motivated and driven software engineer, currently responsible for managing the development operations at a small enterprise specialised in Industrial Internet of Things (IIoT).

In my current role I have demonstrated exceptional resourcefulness and leadership. I have taken a company which had previously never written a line of code, to changing their mission statement to focus on and ultimately generate revenue from data.

This award-winning project, and the development team which I founded, leaves the business better placed to deal with future challenges and grow into future markets.

I am keen to advance my cloud expertise, share the knowledge and experience I have acquired, and collaborate with other developers.

Highlights

Certifications: AWS Solutions Architect Associate, AWS CP

Languages: TypeScript, JavaScript (NodeJS), SQL (Postgres), HTML, CSS, Bash, Python

Frameworks: React, AWS Serverless

AWS Services: CloudFormation, Lambda, SNS, SQS, EC2, S3, API Gateway, ElastiCache, RDS, Timestream, Cognito, IoT

Other Tools: GitHub, Jira, Jest

Timeline

10/2020 – present JWF Process Solutions – Head of Software Development
<https://www.jwfltd.com/>

JWF Process Solutions embarked on a two-year Knowledge Transfer Partnership (KTP) with Innovate U.K. and the University of Strathclyde, where the primary objective was to transform the business from traditional distribution to a company which sells data.

With no roadmap, and joining the company during the height of COVID-19 pandemic, I designed a system architecture which enabled oxygen measurement across NHS hospitals in Scotland. What started as a proof of concept, quickly became a production system involving the majority of NHS real estate. I reflect on this period of my career as a time when I really made a difference. Our company were awarded a CEED Scotland award, and my KTP is nominated as one of the most successful Knowledge Transfer Partnerships concluding in 2023.

Our primary system architecture consists of a myriad of AWS services. These are interconnected with NodeJS lambda functions which implement routing and alarm logic, HTTPS APIs, and caching behaviour within a Redis caching layer. As the founder, I have practical experience at all levels of the stack, from setting up DNS records and load balancers, to writing type-safe business logic, to effective database selection and query implementation.

I was quickly elevated to a more senior position within the business and now lead a team of three developers to build scalable “measurement as a service” solutions, and help to improve the company’s IT infrastructure. In addition to

this, I often contribute to executive level meetings with our partners and customers. I built up a software engineering workflow from my perceptions of industry best practices, and continually seek to improve DevOps.

This process has greatly enhanced my interpersonal skills and given me the confidence to write great products with technologies I like using.

Projects and Technologies Used

Monitoring Dashboards – AWS IoT Greengrass (Python & Typescript components), Various Industrial Protocols (BACnet/IP, Modbus, 4-20mA, etc), AWS Lambda, AWS Timestream, Grafana, AWS Cognito, Redis, Docker, EC2

ERP/CRM Modernisation Project – AWS Lambda, React, AWS S3, AWS SQS, AWS SNS, Grafana, AWS Cognito, Dynamics 365 CRM, Dynamics 365 Business Central, Dynamics Great Plains

Internal HR Portal – AWS Lambda, React, AWS S3, AWS SNS, Grafana, AWS Cognito

09/2019 – 09/2020 MSc Software Development
The University of Strathclyde, Glasgow

Achievements Distinction (first class)
Dux Medallist and winner of Strathclyde Masters Scholarship

08/2017 – 08/2019 Assistant Engineer at SNC-Lavalin's Atkins (Engineering Consultancy)
<https://www.atkinsrealis.com/>

As part of the EC&I (Electrical, Control & Instrumentation) team based in the Bellshill office, I provided project-specific EC&I solutions which are compliant with both safety and regulatory requirements.

Key Responsibilities

- Undertaking remote site visits to perform highly detailed design surveys.
- Facing clients, understanding their needs, and capturing design requirements
- Effectively communicating with vendors to specify instruments, equipment and control systems
- Participating in and leading design workshops: - Alarm Management/HAZOP/LOPA
- Authoring and witnessing tests to ensure systems are built as designed and defects are rectified.

Project Highlights

- Control system design for decommissioning works at Aldbrough and Atwick salt caverns
- Remedial fuel cycle upgrades to Heysham 1 nuclear power station
- Remedial process safety improvements to Capenhurst uranium enrichment plant
- Decommissioning system designs for Dungeness A nuclear power station

09/2012 – 06/2017 MEng Electronic and Electrical Engineering with International Study
The University of Strathclyde, Glasgow

Winner of the Magnus MacLean Memorial Award (Dux Medallist)