

# Mark Gascoyne

Polyglot Full Stack Software Engineer

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## Summary

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With over 15 years of hands-on experience in software engineering, I specialize in building scalable cloud-native platforms and leading distributed engineering teams. My expertise spans the full stack - from Kubernetes operators and GitOps infrastructure to modern React frontends.

I have deep domain expertise in the energy sector, having built production systems for home energy management, smart meter integration, and battery optimization. This unique combination of cloud infrastructure skills and energy domain knowledge positions me to deliver high-impact solutions in the rapidly growing cleantech space.

As a lead engineer, I drive technical strategy, mentor team members, and deliver production-ready systems. I'm passionate about sustainable technology and building platforms that make a real-world impact.

## Skills

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### DevOps & Orchestration

Kubernetes | Helm | Flux | ArgoCD | Skaffold | Kustomize | Docker | Linux | Terraform | Argo | K3S

### Programming Languages

Golang | TypeScript | .Net | CSharp | VB.Net | Scala | Node.js | Java | Bash | Python

### Tools & Frameworks

GitHub | Git | Circle CI | Z Wave | Modbus | TFS | MVC | Spring | Confluence | GitLab | BitBucket | Jira

### Web & Frontend Development

Vue.js | React | Swagger | Rest | Signalr | JQuery | Knockout | Backbone.js | Highcharts | Soap

### Databases & Messaging

SQL Server | Cassandra | Entity Framework | Redis | Microsoft SSAS | SQL Server Integration Services | Apache Kafka | NATS | PostgreSQL

### Cloud Platforms

Google Cloud | Azure | AWS | Confluent Cloud | Oracle Cloud Infrastructure

### Monitoring & Observability

Prometheus | Grafana | Thanos | Loki

## Experience

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### Vitrifi

Remote

#### Network Systems (Lead Software Engineer)

Jun 2023 - Present

I lead the design and implementation of scalable software architectures while contributing hands-on to critical software development. I review code submissions from team members to ensure adherence to coding standards and quality. I also manage project timelines and collaborate with product managers to align technical and business objectives.

### Achievements

- Architected and developed 5+ production-grade Kubernetes operators using Golang for network service lifecycle management.
- Designed and implemented a distributed CRDT-based datastore system for multi-region network state synchronization with membership tracking, peer metadata broadcasting, and TTL-based expiration.
- Built GitOps infrastructure using ArgoCD and Kustomize serving as single source of truth for all cluster deployments across development and production environments.
- Led the development of automation tools for deployment pipelines, improving deployment reliability and reducing manual intervention.
- Pioneered GitOps patterns and best practices adopted across the organization, including merge automation and environment-specific configuration management.
- Ensured comprehensive technical documentation and promoted knowledge sharing within the team and wider business.

### Skills

Vitrifi

Remote

### GitOps Consultant (Software Engineer)

Dec 2022 - Jun 2023

I implemented GitOps strategies for the organization and contributed to the development of custom tools designed to integrate with GitLab CI. I also adapted and extended an existing library of internal tools to fit the unique requirements of the business, enhancing deployment automation and efficiency.

#### Achievements

- Implemented GitOps across multiple environments, automating deployment pipelines using GitLab CI.
- Developed and customized tooling to streamline GitOps workflows, including writing new tools from scratch to meet specific business needs.
- Enhanced deployment reliability and scalability by integrating custom tools with existing infrastructure.

#### Skills

aws | golang | kustomize | argocd | flux | k3s | kubernetes | docker | gitlab | bash | terraform

Vitrifi

Remote

### Senior Go Developer

Jun 2022 - Dec 2022

I developed CI/CD pipelines with Gitlab CI and a CNE Kubernetes operator.

#### Achievements

- Successfully delivered CI/CD pipelines and CNE Kubernetes operator.

#### Skills

aws | golang | kustomize | argocd | flux | k3s | kubernetes | docker | gitlab | bash | terraform

Dae.mn/ Kultralab

Remote

### Senior Software Engineer

Jun 2021 - Jun 2022

I delivered infrastructure as code and declarative infrastructure maintained using GitOps, and delivered CI/CD pipelines. I refined the backlog, gathered requirements, and developed the supporting services.

#### Achievements

- Successfully delivered infrastructure as code and CI/CD pipelines.

#### Skills

aws | postgresql | golang | skaffold | kustomize | flux | kubernetes | terraform | k3s | react | graphql | docker | bitbucket | jira | confluence | bash | terraform

Ve Global

Remote

### Software Consultant

Jul 2020 - Jun 2021

I restructured Ve's infrastructure and technology to save costs and create a more manageable environment. I introduced and set up local development using Kustomize/Skaffold/Minikube, and rolled out GitOps to improve deployment pipelines. I also trained developers to develop best-in-class microservices.

#### Achievements

- Successfully restructured infrastructure and technology.
- Implemented GitOps to improve deployment pipelines.
- Trained developers on best practices for microservices.

#### Skills

azure | kubernetes | skaffold | kustomize | vuejs | kafka | confluent-cloud | golang | docker | flux | bash

Thermeon Worldwide Ltd

Remote

### Software Engineer

Jan 2018 - Jul 2020

I worked closely with both the development and infrastructure teams, which are spread all over the world. I engineered microservices written in Golang and delivered them via the Google Kubernetes Engine. I introduced operations via pull requests to deliver continuous deployment, maintaining stability.

#### Achievements

- Undertook the company's first leap into Kubernetes.
- Worked with all teams to introduce an agile way of working.
- Developed and delivered a single sign-on solution hosted in Kubernetes and written in Golang.
- Developed and delivered a PCI encryption microservice hosted in Kubernetes and written in Golang.
- Introduced GitOps using Weaveworks and various other Kubernetes technologies (cert-manager, external-dns, sealed-secrets).
- Produced a Horizontal Pod Autoscaler for Kubernetes that uses pod readiness rather than metrics for scaling.
- Developed a client-facing website for booking rentals.

#### Skills

github | circle-ci | kubernetes | golang | helm | flux | vuejs | google-cloud | docker | linux | cassandra | swagger | rest | bash

### Utilitywise PLC

Chesterfield, UK

#### Senior Software Engineer

Apr 2015 - Jan 2018

I worked as part of a team to deliver control and automation to the Wiselife IoT product.

#### Achievements

- Developed the Wiselife IoT product.
- Developed supporting services and data management systems.

#### Skills

entity-framework | sql-server | z-wave | modbus | cassandra | scala | dotnet | entity-framework | nodejs | docker | linux | tfs | signalR | redis | git | azure | aws

### t-mac Technologies Ltd

Chesterfield, UK

#### Software Engineer

Apr 2012 - Apr 2015

I was a web applications developer working in a fully agile environment, developing monitoring, controls, and analysis software used throughout the energy sector. I gathered requirements, designed, developed, and delivered bespoke software solutions for some of the big names in the energy industry.

#### Achievements

- Designed and developed customized energy dashboards for diverse clients, enhancing data visualization and analysis capabilities.
- Spearheaded the creation of the tmac energy analytics platform, optimizing energy consumption insights for stakeholders.
- Engineered data ingestion and processing services, streamlining data handling and analysis workflows for improved efficiency.

#### Skills

csharp | mvc | java | spring | jquery | entity-framework | knockout | backbone | highcharts | ssas

### EnServe Group Limited

Leeds, UK

#### Software Engineer

Sep 2010 - Apr 2012

I worked under the direction of Richard Marr (Senior Lead Developer) on the development and maintenance of Job Track Enterprise (JTE) for H2O Water Services Ltd and Thames Water / Veolia Water. I was fully involved in the maintenance and ongoing development of the JTE system for H2O, including the Smartclient application, website, web services, mobile devices database, and SSIS packages. I was also fully involved in the development of the JTE system for Thames Water in the run-up to live deployment, including all of the above elements plus integration with the IBM Websphere messaging system for near real-time integration with the Insight TMA system. Additionally, I interpreted new requirements for both JTE systems in consultation with internal and external stakeholders.

#### Achievements

- Developed and maintained the JTE system for H2O and Thames Water.
- Integrated the JTE system with IBM Websphere for near real-time data processing.

#### Skills

soap | csharp | sql-server | vbdotnet | ssis

Cse-Healthcare Systems Ltd

Eckington, UK

Student Software Engineer

Jun 2008 - Sep 2009

I maintained product specialist's demo laptop builds of RiO and developed and maintained internal tools used by all areas of CSE-healthcare systems. I worked as part of the live service team investigating software issues, issuing hot fixes and releases, and as part of the testing team, testing software modules, identifying code paths, and creating testing plans. I also designed and created the replacement correspondence reference system, which is used company-wide, and a testing automation framework that automated web pages from the user point of view.

Achievements

- Designed and created a testing automation framework that was flexible, reusable, and well-documented.

Skills

csharp | sql-server | ssis

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## Education

Sheffield Hallam University

BSc(Hons) Software Engineering

2006-2010

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## Interests

I possess a diverse array of skills and interests that keep me engaged and constantly learning. Here are just a few of my passions:

Family Adventures: I cherish quality time with my family, especially when it involves taking my son on camping and hiking excursions.

Overlanding Enthusiast: I love exploring off-grid and hard-to-reach places in my 4x4, discovering new terrains and enjoying the thrill of adventure.

DIY Electronics and Home Automation: I'm passionate about creating innovative solutions through DIY electronics and home automation projects, always looking for ways to enhance our living space.

3D Printing and Design: I engage in 3D printing and CAD/CAM design, combining creativity and technology to bring unique ideas to life.