

Andrew Mcveigh
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Curriculum Vitae

Andrew Mcveigh

Education

University of Huddersfield, UK

- BSc Software Development & Multimedia (1st Class), 2008

Technologies

Languages

Bash, CSS, Clojure, ClojureScript, Elm, HTML, Haskell, Idris, Java, JavaScript, Python, Ruby, Rust, SPARQL, SQL, Scheme

Platforms, Tools & Frameworks

AWS, Apache, Aurora, Azure, Docker, EC2, ECS, ELK, Geospatial, Git, Google Cloud, Kafka, Kinesis, Linked Data, Linux, Mapbox Vector Tiles, MongoDB, MySQL, Nginx, NixOS, PostgreSQL, RDF, RabbitMQ, React, Redis, Riemann, S3, SQLite, Shapefiles, Svelte

Talks

A Dynamic, Statically Typed Contradiction

Given at ClojureX, London, Dec 2017 and :clojured, Berlin, Feb 2018. The talk was about Algorithm-W, how static type-checking (of the Hindley-Milner family) works, with an implementation of a Hindley-Milner based type-checker for a growing subset of Clojure. The type-checker included features such as Haskell-like typeclasses and extensible records.

Speculative Development

Given at ClojureX, London, Dec 2016 and :clojured, Berlin, Feb 2017. The talk was on the topic of clojure.spec, a data specification DSL for Clojure, and what you can do with it if you're willing to bend the rules a bit.

Experience

Director / Consultant / Product Engineer: Modfacto LTD [2025 - Present]

Working as a Consultant delivering solutions across multiple projects for government and public sector clients, using a diverse technology stack including Python, Java, Clojure, JavaScript, React, Linked Data, RDF, SPARQL. Designed, and delivered scalable web-based and geospatial data systems.

Additionally working as a Product Engineer developing audio applications in Rust, contributing to system design and implementation with a focus on performance, reliability, and efficient low-level processing.

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Principal Engineer: Swirrl IT LTD ... TPXimpact [2019 - 2024]

Joined Swirrl IT Ltd in 2019; continued in role following acquisition by TPXimpact in 2022. Joined as a Senior Software Engineer and progressed to Principal Software Engineer, contributing to core platform infrastructure and leading major public sector delivery initiatives.

Worked across a broad range of technologies spanning web and geospatial data systems, including JavaScript and React for front-end development, and Java and Clojure for backend services. Used SPARQL for querying linked data, and PostgreSQL/PostGIS for data storage and geospatial processing. Leveraged cloud platforms such as AWS and Google Cloud for deployment and scalability. Worked extensively with geospatial linked-data formats and tooling, including processing shapefiles and generating Mapbox Vector Tiles, supporting the development of data-intensive, map-driven applications.

Core Infrastructure & Platform

Contributed to and evolved Swirrl's core infrastructure, improving reliability, scalability, and operational maturity across cloud-hosted data platforms. Played a key role in architectural decisions, deployment automation, and production support for business-critical services.

Environment Agency Programme – Lead Engineer

Acted as Lead Engineer for a long-running programme with the Environment Agency, providing technical leadership across multiple concurrent projects spanning product development and site reliability.

Key contributions included:

- Architectural oversight and engineering direction for several production systems.
- Leading reliability and operational improvements for public-facing data services.
- Rewriting the Catchment Data Explorer to modernise its architecture and improve maintainability and performance.
- Taking the Shoreline Management Plan platform from prototype through to full production, establishing scalable infrastructure and delivery practices.
- Worked closely with client stakeholders to translate complex environmental and policy requirements into robust, production-grade systems.

Senior Software Engineer: Habito [2018]

Worked primarily on backend systems and a mortgage broker portal using Haskell and PureScript, building and maintaining robust, type-safe services and user-facing functionality. Focused on improving system reliability and correctness within a functional programming paradigm.

A key achievement was diagnosing and resolving a complex, deep-seated bug in the Haskell/PostgreSQL event sourcing persistence layer, restoring data consistency and improving the stability and integrity of the platform's broker/customer data workflows.

Developer: GoMore [2017 - 2018]

GoMore is a peer-to-peer transportation startup based in Copenhagen. The product is a web and mobile app enabling customers to share car journeys, to share their car by renting it out, and to lease cars that can then be used on the rental platform.

My responsibilities were to lead infrastructure projects as part of the backend team, and build out Clojure APIs as part of the broader product team. The APIs need to handle many versions at once,

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as this enables the mobile product to move quickly with new or improved features, but existing mobile clients still need to be supported. We can only phase out deprecated versions when they are seeing little to no traffic, and many users cannot upgrade to new clients due to restrictions on the handsets.

Recent infrastructure highlights include a move of the whole product and infrastructure to containers from Elastic Beanstalk, and migrating the main database load to an Aurora cluster. We can now better distribute the load to read heads, and scale the database horizontally relatively quickly.

Developer: uSwitch Ltd. [2015 - 2017]

Platform Looking after the core services running the energy business, including the central comparison engine powering the energy website, along with various data APIs, processing pipelines, and data delivery to different teams. Building out new APIs to support 3rd party integrations for comparison and metadata. Involved quite a bit of scaling and performance work to cope with 10+ times normal load spikes of traffic and similar rates of sign-ups and sales, due to TV promotion of energy switching.

Back office Cross-functional team, involving commercial, operations, financial and software development. The role involved maintenance and development of uSwitch Energy's backend services responsible for the day-to-day operation of the energy business. Negotiating with 3rd parties and commercial around specification and implementation of data exchange. Services involved the integration, delivery and processing of data to and from 3rd parties, product tracking, financial reporting and analysis.

Technology The majority of services were written in Clojure, with some Ruby and a bit of tooling in Go. Data was delivered to different teams via Kafka, Kinesis/Firehose, RabbitMQ, HTTP or FTP as required. The infrastructure was hosted on EC2, mostly using AWS's Elastic Container Service. Logging/monitoring with ELK, Cloudwatch (metrics/alarms) and Sensu (alerting).

Software Developer: Interel Group, Brussels [2008 - 2015]

Responsible for the design, development, and maintenance of all the group's software infrastructure, including the deployment and automation of key Linux-based services.

Applications ranged from internal financial administration and reporting tools, project management tools, internal infrastructure monitoring, and data exporting, to client-facing CMS building and customisation.

The services were deployed on in-house servers, bespoke applications and services were written mainly in Clojure, with some Java. Web apps were build using ClojureScript and React(OM) on the front-end.