



Curriculum Vitae - Andrew Paterson

Senior Software Engineer | Full Stack | Cape Town

✉ andrew.paterson9@gmail.com

☎ +27 72 232 4258

🌐 <https://www.linkedin.com/in/andrew-john-paterson>

🐙 <https://github.com/andrew-paterson>

Professional summary

Senior software engineer with eleven years of experience building web applications, APIs, and the teams that maintain them. Over that time I grew from building my first UIs to leading frontend teams, designing APIs, and shaping platform architecture across a complex, cloud-hosted SaaS product built to high standards of reliability and quality at Hyrax Biosciences. A long-standing interest in art and design has shaped how I approach the frontend in particular. I care about how things work and how they look. That chapter taught me a great deal, and I'm now ready to bring that experience to a new challenge.

Work experience

Staff engineer

Hyrax Biosciences, May 2025 - March 2026

Led the design and implementation of a unified cloud platform consolidating all of Hyrax's customer-facing products into a single API and account system. Responsible for the full platform UI, database and API design, deployment strategy, and a platform-wide automated testing strategy. Designed and built the internal API and UI to serve the billing and business analytics needs of the wider team.

Frontend and API lead

Hyrax Biosciences, March 2023 - May 2025

Led the merger of the Exatype NGS HIV and Exatype SARS-CoV-2 products into a single platform with a unified product store. Redesigned the UI and collaborated on a full redesign of the API and database structure to accommodate the merge. Built and maintained a MirageJS mock server documenting all API routes and responses, and implemented all design and code changes at the UI level.

Frontend team lead

Hyrax Biosciences, February 2021 - March 2023

Led the hiring, onboarding, and management of a new frontend team member, including creating the technical assignment, conducting interviews, and establishing code review and documentation processes. Continued development and maintenance of the internal Admin API and existing Ember.js user interfaces.

Full stack developer

Hyrax Biosciences, October 2017 - February 2021

Designed and built an internal API using Elixir and Phoenix, including surveying team needs, designing the PostgreSQL database structure, and implementing routes for usage tracking, billing, and credits. Built the corresponding Ember.js UI. Continued development of the Exatype NGS HIV and Sanger HIV user interfaces, and built the new UI for the Exatype SARS-CoV-2 product.

Frontend developer

Hyrax Biosciences, May 2015 - October 2017

Joined Hyrax as the first employee. Built the first iterations of the Exatype NGS HIV and Sanger HIV user interfaces in Ember.js. Created the company brand identity including logos, style guide, and marketing materials. Established a centralised Ember.js code structure to enable code sharing and consistency across multiple applications. Built the company homepage using Hugo.

Web designer and developer

Self employed, April 2012 - May 2015

Designed and built websites for a range of small businesses, helping them establish an online presence and drive sales.

Key competencies

- Frontend design and development
- SDK and embeddable component development
- Data visualisation
- Full-stack web application development
- API design, implementation, and documentation
- Database design and implementation
- Platform and system architecture
- Team leadership — hiring, onboarding, code review, and day-to-day management
- Cross-departmental project coordination
- Open source development and maintenance
- Brand identity and UI design
- Cloud infrastructure — AWS (Route53, S3, CloudFront)
- Kanban based project tracking
- AI-assisted development workflows
 - Large-scale codebase refactoring
 - Cross-referencing production server routes against mock server equivalents to identify coverage gaps and improve structural consistency
 - Build configuration and tooling (Vite, GitHub Actions)
 - GitHub Copilot and Claude as day-to-day development aids

Technologies

Frontend

JavaScript TypeScript React Next.js
Ember.js HTML CSS SCSS

Backend

Node.js Elixir Phoenix Express

Database

PostgreSQL SQL

Testing

Vitest QUnit MirageJS Mock Service Worker

DevOps & infrastructure

GitHub Actions AWS Google OAuth
Github Apps

Tools & environment

Linux Git Slack VS Code Notion NPM

Other

Hugo WebSockets Google APIs

Education

Bachelor of Laws (LLB)

🏠 Rhodes University
📅 2006 - 2007

Bachelor of Arts (BA)

🏠 Rhodes University
📅 2003 - 2005

Development work

Exatype platform

End-to-end cloud based platform

<https://www.youtube.com/playlist?list=PLyuXERhvCeykyEeUzNaM6n3v7b1xizqww>

↳ Ember.js, JavaScript, QUnit

Design and implementation of a unified platform consolidating all of Hyrax's customer-facing products into a single API and account system. I was exclusively responsible for the UI and co-designed the database structure and API alongside it. Annotated demos of the platform are available at

<https://www.youtube.com/playlist?list=PLyuXERhvCeykyEeUzNaM6n3v7b1xizqww>.

React Changeset Webforms

Validating webforms

<https://react-changeset-webforms-test-app-n.vercel.app>

<https://github.com/andrew-paterson/react-changeset-webforms>

↳ React.js, Next.js, JavaScript, TypeScript, Vitest, QUnit

A published open source SDK and embeddable component that fully abstracts the rendering layer of complex, dynamic webforms in React. Consuming applications pass a form described as a data structure to a single component for rendering, which handles validation, field visibility, repeatable fields, and callback events. Accepts application-level configuration via React Context, making it a properly integrated part of the host application's architecture rather than a standalone component. Built on a TypeScript core library ([validated-changeset-webforms](#)) that I also authored, which handles the underlying data and validation model. Includes a full test suite. Live documentation and demos at <https://react-changeset-webforms-test-app-n.vercel.app>.

Ember Changeset Webforms

Validating webforms

<https://ember-changeset-webforms.com>

<https://github.com/andrew-paterson/ember-changeset-webforms>

↳ Ember.js, JavaScript, TypeScript, QUnit testing framework

The Ember.js equivalent of React Changeset Webforms, built on the same vanilla TypeScript core. Full documentation and live demos at <https://ember-changeset-webforms.com>.

React Mirage MSW

Mocker server

<https://react-changeset-webforms-test-app-n.vercel.app>

<https://github.com/andrew-paterson/react-mirage-msw>

↳ React.js, MirageJS, Mock Service Worker

Mirage JS is well-established for mocking APIs in React, but its default request interceptor (Pretender) has long-standing limitations with non-text responses — binary data, array buffers, and streams are either mangled or unsupported entirely.

react-mirage-msw solves this by swapping in [Mock Service Worker](#) as the interceptor. Standard JSON routes continue through Mirage's serializer layer as normal, while a `rawRoutes` escape hatch allows raw MSW handlers for binary or streaming responses. A `setupMirage` Vitest helper uses MSW's Node interceptor under the hood, so the same config works in both the browser and tests with no duplication.

Finance tracking application

Data visualisation and access

<https://finance-tracker-demo.ajp-sandbox.co.za/>

↳ Ember.js, JavaScript, Data visualisation, MirageJS, Google OAuth, Google Drive API, QUnit testing framework

A web application that presents personal bank statement data with sorting, filtering, pagination, and tagging. Features include smart tags that apply automatically based on user-defined criteria, monthly spend breakdowns as animated canvas-based charts that users configure dynamically through the UI, and running account balances. Authenticates via Google OAuth and reads data from Google Drive. Demo at <https://finance-tracker-demo.ajp-sandbox.co.za>, with the monthly breakdowns visualisation specifically at <https://finance-tracker-demo.ajp-sandbox.co.za/monthly-breakdowns>.

References

Andre van der Merwe

CTO, Hyrax Biosciences

andre@hyraxbio.com

+353 87 219 7018

Kirsten Miller-Duys

Former Business Manager and
Acting CEO, Hyrax Biosciences

kirsten.duys@gmail.com

+27 71 270 2246

Imogen Wright

Senior Software Developer, AWS
EC2

imogenawright@gmail.com

+27 83 942 1931