


# Alan Mortoni

## Frontend Systems Architect / Senior Frontend Engineer

Frontend systems architect designing reusable frontend platforms, operational interfaces, and geospatial/data-intensive systems across transport and public-sector environments.

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 Brisbane, Australia

### CORE THEMES



#### Frontend Systems Architecture

Reusable interface foundations for multi-product platforms.



#### Design Systems & Developer Experience

Shared UI systems that raise quality and delivery velocity.



#### Geospatial & Mapping UI

Scalable interaction models for map-heavy operational workflows.



#### Cloud-Integrated Frontend

Frontend architecture aligned with distributed cloud services.



#### Operational Data Platforms

High-context interfaces for publish, monitor, and response loops.



#### Testing & Platform Quality

Risk-focused coverage for critical, high-change workflows.

## Frontend Systems Architect / Senior Frontend Engineer

Queensland Department of Transport and Main Roads

2023 – Present

React

TypeScript

GraphQL

MapLibre

Playwright

Storybook

MobX

Leading frontend systems architecture across transport platforms, with emphasis on reusable foundations, operational interface quality, and geospatial data workflows.

## GDS / Map Core / Map Kit

Reusable geospatial platform architecture for transport and operational mapping systems.

- Designed and evolved a layered Map Core + Map Kit architecture using React, TypeScript, MapLibre, and GraphQL/AppSync to support reusable geospatial workflows across transport and operational platforms.
- Standardised shared map interaction patterns including layers, markers, clustering, selection flows, geometry rendering, and operational map contracts to reduce fragmentation and improve cross-team consistency.
- Established frontend platform foundations through Storybook documentation, Playwright E2E coverage, reusable UI systems, basemap strategy, and integration guidance focused on scalability and long-term maintainability.

Case Study: <https://alanmortoni.dev/work/gds>

## HAP

Operational platform for publishing, governing, and consuming transport datasets.

- Architected the frontend model for publish-review-release workflows across policy, data, and operations users.
- Designed reusable operational patterns for validation, approvals, ingestion management, and dataset lifecycle governance across Data Exchange and Control Centre platforms.
- Defined scalable frontend contracts and interaction models for high-volume transport data operations, balancing operational clarity, platform maintainability, and evolving integration requirements.

Case Study: <https://alanmortoni.dev/work/hap>

## Central Facility

Operational interface layer for transport workflows with high data density.

- Led the frontend architectural evolution of Central Facility, reshaping legacy operational workflows into a more maintainable and scalable platform foundation.
- Architected operational interfaces designed for high-density transport workflows requiring rapid interaction, contextual continuity, and predictable behaviour.
- Improved engineering reliability through reusable frontend patterns, targeted end-to-end coverage, and safer operational interaction flows.

Case Study: <https://alanmortoni.dev/work/central-facility>

## ENGINEERING BACKGROUND

Senior Frontend Engineer

NHVR · 2021 – 2023

Delivered regulatory and operational interfaces for national heavy vehicle systems, expanding architecture ownership across data-intensive transport products.

### Senior Frontend Developer

PCCW Global · 2019 – 2021

Built operational telecom platform interfaces with focus on maintainability, consistency, and scalable frontend engineering practices.

### Mentor / Reviewer

Udacity · 2018 – 2020

Provided structured technical mentorship and project reviews across frontend and UX nanodegree programs.

### Senior Frontend Developer

Virgin Australia · 2017 – 2019

Developed customer and operational interfaces within high-traffic aviation environments, strengthening workflow and UX delivery experience.

### Frontend Developer

Flight Centre · 2015 – 2017

Built reliable booking and travel platform experiences across customer-facing web systems.

### Software Developer

FlyFreely · 2014 – 2015

Contributed to early aviation operational workflows across web and mobile product environments.

## EDUCATION

### Bachelor of Computer Science

Catholic University of Brasília

### Formal & Professional Training

Udacity Nanodegree Programs: Frontend Developer, User Experience Design, React Developer, Senior Web Developer

## SELECTED PERSONAL PROJECTS



## PatternForge

Offline-first chess training platform built around pattern recognition, repetition cycles, and local persistence.

- Structured training around puzzle sets, cycles, and sessions for repeatable tactical pattern recognition.
- Designed local-first persistence so progress, review paths, and study sessions remain reliable without network dependence.
- Built focused repetition workflows—mistake review, cycle comparison, and session continuity—for sustained improvement.

Project link <https://alanmortoni.dev/projects/patternforge>



## Civicbase

Civic participation platform for structured consultations using quadratic voting, analytics, and transparent reporting.

- Built a monorepo with shared TypeScript domain core for survey schemas, validation, and report logic.
- Implemented a hash-chained integrity ledger so votes and survey events remain tamper-evident.
- Delivered invitation-based participation flows, analytics dashboards, and AI-generated result summaries.

Project link <https://alanmortoni.dev/projects/civicbase>