

Fullstack Engineer

Michael Poulgrain

TypeScript | NodeJS | React | NextJS | PostgreSQL | AWS

Brisbane, QLD, AU | Australian Citizen
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Profile Summary

Fullstack Engineer with a foundation in Electrical & Electronic Engineering and a lifelong passion for programming. I specialize in enterprise applications with a modern web stack, balancing a commitment to **clean code and maintainable design** with a focused drive to **deliver tangible business value**. In my current role at Auto & General, I contribute to the modernization of internal platforms while **taking the lead on team-wide documentation** to ensure long-term codebase health. I approach software with a **systems-thinking engineering mindset**, prioritizing foundational principles to build reliable, scalable tools that drive organizational growth, regardless of their size.

Skills

Great	Node.js, React, TypeScript, PostgreSQL, HTML, CSS
Good	AWS, Kubernetes, Git, CI/CD, Terraform
Competent	Next.js, Vue.js, Python, Assembly, C

Certifications

- **Meta**
 - Frontend Developer (January 2024)
 - Backend Developer (January 2024)
 - Database Engineer (January 2024)
- **AWS**
 - AWS Certified Solutions Architect - Associate (April 2025)

Work Experience

Auto & General

Fullstack Developer

01/2025 - Now

Brisbane, Australia

Auto & General are a leading Australian insurance provider responsible for brands such as Budget Direct & Compare the Market. I worked in an agile team responsible for the development and maintenance of an internal platform used for claims fulfilment.

- Improved system health by **refactoring legacy code** and reducing technical debt, which increased the stability and performance of the fulfillment platform.
- Acted as a **technical point of contact for the vendor's engineering team**, identifying platform-level bugs and collaborating on development requirements to support internal goals.
- Developed and maintained **complex internal business logic** within a third-party platform, ensuring the fulfillment system correctly addressed specific insurance requirements and operational needs.
- Contributed to the **end-to-end development** of a mission-critical API integration with **Prime Ecosystem**, automating data exchange between internal systems and Australia's largest building industry CRM.
- Contributed to daily stand-ups, sprint planning, and peer code reviews. Spearheaded documentation efforts through the **creation of the team's official style guide and logging best practices**, alongside the branching strategy and other key documents to ensure long-term codebase consistency.

Technologies used: Kubernetes, Node.js, React, GraphQL, PostgreSQL, Terraform

Sota Service

Electrical Engineer / Software Engineer

01/2023 - 09/2024

São Paulo, Brazil

SotaService is a company providing studies of grounding systems within the electrical energy generation sector of Brazil. My role was split between performing core electrical engineering analysis and developing a software Proof of Concept to automate a complex workflow.

- **Designing, developing and releasing** a desktop application that simplified fault current calculations across transmission lines, enabling the wider engineering team to perform a process that was previously limited to a single specialist engineer, thereby reducing bottlenecks in company processes.
- Handled **all phases of the development lifecycle** from idea to implementation, including testing and CI/CD. Prioritised **separation of concerns** and encapsulation to increase testability, reusability and maintainability.
- The project was demonstrated as part of a master's thesis on novel techniques for calculating currents along transmission lines in residential areas.

Technologies used: React, Electron.js, Drizzle ORM, tRPC, SQLite, TailwindCSS, Github CI/CD, Vitest.

Nova Biomedical

Biomedical Engineer

2018-2021

Gold Coast, Australia

Nova Biomedical is a provider of preventative and corrective maintenance of medical devices within the healthcare sector across Australia and New Zealand.

- **Designed and implemented** a web-based repair tracking system that enabled the team to track operations and inhouse repairs, allowing the company to scale operations while maintaining rigorous quality standards.
- **Redesigned** and **maintained** business applications, both internally and customer-facing.
- Initially designed with a basic LAMP stack, the project has evolved as my knowledge has grown, allowing me to refactor with new technologies in a business context.
- Today the project demonstrates my values as a full-stack engineer: clean, maintainable code with clear separation of concerns, a preference for abstraction over repetition and the use of **industry-standard design patterns** where applicable.

Technologies used: Nextjs, Reactjs, Nodejs, HTML5, Tailwind, PostgreSQL.

Education

Bachelor of Engineering, Electrical and Electronic

Griffith University

2013 - 2016

Gold Coast, Australia

- GPA 5.7, Class IIA Honours and Griffith Award for Academic Excellence in 2014
- Distinction in thesis, "*The application of weather forecasting in small scale solar photovoltaic (PV) grids.*" involving a Python-based OS and a Java Android app.

Hobbies / Achievements

- Having lived on three continents and visited over 50 countries, I enjoy seeking out adventures that challenge myself. These range from cycling 415 km through the Alps on the Alpe Adria path to motorcamping 8,000 km to Darwin and back or trekking 500 km across the Everest Base Camp and Annapurna circuits in a month. These experiences have shaped my ability to stay resourceful and adapt quickly when navigating remote or unpredictable environments.
- I enjoy long-distance running and have participated in several events across the globe; including the Stevensloop Half Marathon (Nijmegen, NL), the Rota da Ferradura (Espírito Santo, BR) and the Brisbane Marathon.
- In my spare time, I get a kick out of maintaining an overengineered home network that serves as my personal sandbox for exploring enterprise-grade security and networking. I use it to get hands-on with a diverse stack of open-source tools including OPNsense, TrueNAS, and Kubernetes, managing everything from authentication, intrusion prevention to custom home automation.