BENJAMIN MCLEAN

Full Stack Developer | Focused on Craftsmanship and Quality

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SUMMARY

Full-stack developer with an engineering education. Skilled in building scalable web apps using TypeScript, Fastify, React, Next.js, and Supabase. Experienced in owning codebases, infrastructure, and deployments. Focused on clean architecture, TDD, and modern DevOps practices. Proven ability to deliver high-quality solutions and lead projects.

EXPERIENCE

Full Stack Developer

Catalyst Technologies   05/2024 - Present   Saskatoon, Canada

Technical owner of multiple full-stack projects in AgTech industry.

- Sole developer responsible for end-to-end delivery on multiple projects. Designed architectures, implemented features, managed deployments.
- Designed and built scalable backend REST APIs using **Fastify**, **Node.js**, **TypeScript**, **Supabase**, and **PostgreSQL**.
- Developed reusable, component-based frontends with **React**, **Next.js**, and **SCSS modules**, sharing components across multiple applications.
- Used **Next.js's** Image component to reduce image payload sizes by over 90%, reducing transfer size.
- Integrated **Sanity CMS** with intuitive interfaces for content managers.
- Selected and managed infrastructure on **DigitalOcean** to support performance and scalability.
- Initiated and led **AI R&D** projects, including the creation of a virtual sales rep / **knowledge base** powered by OpenAI's **GPT API**.
- Used **Redis** as a job queue to process over 200 product documents into an **embedding database.**
- Improved **PostgreSQL** function performance by **10X**
- Led **DevOps** efforts by designing **CI/CD** pipelines and defining integration processes to ensure reliability.
- Practiced **test-driven development (TDD)** while writing maintainable **Clean Code.**

Software Developer

Lincoln Electric   05/2021 - 05/2024   Vankleek Hill, Ontario

Created software solutions for robotic CAD operations.

- Created a **time estimation tool** for job quoting using **TypeScript** and **React**, improving quoting accuracy and speed.
- Designed and developed a **2D/3D geometry library** to support advanced CAD-like operations and model 3D features.
- Created an experimental web based **2D plate nester** to
- Participated in the maintenance of a large **C# codebase**, performing refactors, adding tests, fixing bugs, and implementing new modules.
- Added over **1500 unit tests** to an existing codebase by practicing **test driven refactoring**.
- Supplied feedback and assisted developers through **code reviews**.
- **Coordinated co-op students**, overseeing the development of internal support tools, communicating concepts like TDD, clean code, and refactoring.
- Drafted a **C# coding standards guid**e.
- Improved unit test run time by 3X by using **swc** with **jest.**
- Experimented with **microservices** on **Kubernetes**.

EDUCATION

Double Bachelors in Mechanical Engineering and Computing Technology

University of Ottawa

2017 - 2022   Ottawa, ON   GPA 7.6 / 10

INDUSTRY EXPERTISE

HTML5, JavaScript/Typescript, React, Tailwind

C#, .NET Core, .NET Framework, Bootstrap, ASP.NET

KEY ACHIEVEMENTS

◈ **AgraCity Platform**

Developed software platform to facilitate the creation of new technologies, including websites, internal business tools, and AI R&D projects.

◈ **PythonX-Predict**

Created accurate and configurable web-based tool for estimating cutting time of steel beams.

SKILLS

Languages/Frameworks

TypeScript   JavaScript   React

HTML/HTML5   CSS/CSS3   Bootstrap

Tailwind   SASS/SCSS   NodeJS   NestJS

Fastify   C#/.NET   ASP.NET   EF Core

SQL   Python   Flask   Java   C/C++

Rust

Tools

Git   GitHub   Azure DevOps   Azure

Docker   Kubernetes   VSCode

DigitalOcean (AWS/GCP Equivalent)   XML

Teams/Slack

Databases

PostgreSQL   MySQL   SQLite

Microsoft SQL Server   MongoDB

Supabase   Indexed DB   Redis