

# 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 guide**.
- 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