

Cooper MacGregor

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EDUCATION

University of Guelph | Guelph, ON

September 2021 – April 2025

B.S in Computer Science, Minor in Business

- Relevant Coursework: Data Structures, Operating Systems, Algorithms, Game Development, Artificial Intelligence, Software Engineering, Mobile Development
- Honours: Dean's List

TECHNICAL SKILLS

Languages: C, C#, Java, JavaScript, TypeScript, Dart, SQL

Frameworks/Libraries: React, Node.js, Flutter, Next.js, Springboot

Tools: Docker, Kubernetes, Git, PostgreSQL, Unity

Methodologies: Agile, Test-Driven Development, CI/CD

WORK EXPERIENCE

SolutionsLRP - Freelance Software Developer

May 2024 - April 2025

- Built and deployed a full-stack claims system used by **140+ auto garages across Canada**, handling **hundreds of monthly submissions** with real-time file uploads and automated admin notifications.
- Engineered secure, role-based workflows using **Next.js**, **Supabase Auth** and **PostgreSQL**, enabling shops to self-register, submit claims, and track statuses, while providing admins with full financial and operational oversight.
- Delivered **100% independently**: architected system, designed schema, implemented frontend/backend, and launched to production — now in active use across the automotive repair industry.

PROJECTS

AutoVision - React, Supabase, OpenAI Vision, Stripe

February 2025

- Built a vision-powered web app that analyzes uploaded car images using **OpenAI Vision AI**, detects vehicle modifications, and suggests compatible aftermarket parts in real-time.
- Integrated **Supabase (Auth, PostgreSQL, Edge Functions)** for secure user management and subscription tracking; implemented **Stripe Checkout** with full subscription lifecycle handling via serverless webhooks.
- Designed a modern frontend using **React + TypeScript + Tailwind + shadcn/ui**, achieving responsive design, smooth animations (Framer Motion), and dynamic state management with React Context and custom hooks.

C- Language Compiler - Java, JFlex, CUP

January 2025

- Led and collaborated with a fellow classmate to build a complete compiler for the C- language (C subset) in Java, implementing all phases: **lexical analysis (JFlex)**, **syntax parsing (CUP)**, **semantic analysis**, and **code generation** targeting the TM virtual machine.
- Designed and constructed a robust **AST and symbol table architecture**, supporting scoped variable/function resolution, type checking, and detailed multi-error reporting across nested control structures and recursive functions.
- Generated optimized **TM assembly code** with support for function calls, stack frames, arithmetic/logical ops, and I/O — producing fully runnable programs for a simulated register-based VM with custom memory and control flow handling.

LEADERSHIP EXPERIENCE

University of Guelph – Department of Computer Science

Scrum Master

January 2023 – April 2023

- Led a team of 6 students to create GeoJobSearch, a web scraping app to find jobs from every job board.