

SKILLS

Languages: C, C++, C#, CSS, HTML, Java, JavaScript, Python, SQL, TypeScript
Frameworks: Android, Apollo, Arduino, ASP.NET, Express, Kafka, OpenGL, PostgreSQL, React, Unity, Xamarin
Tools: AWS, Azure, Docker, Figma, Firebase, GCP, Git, Grafana, New Relic, Octopus, Postman, RDP, Swagger, Unix

WORK EXPERIENCE

TOOLBX

Software Engineer (May 2023 – Present)

Software Engineering Co-Op (Jan 2023 – Apr 2023)

Toronto, ON

Jan 2023 – Present

- Architected a multi-store customer messaging system, using React, **Express**, and **PostgreSQL**, to fulfill product requirements of newly onboarded e-commerce businesses with **31+** store locations.
- Augmented search algorithms, using **GraphQL** and **Algolia**, to support granular price variations across **130K+** products.
- Engineered **RPA** integrations to autonomously extract, parse, and synchronize **\$500K+** of daily invoices from e-commerce businesses operating with third-party ERP software.
- Devised a **GitHub Actions** GraphQL schema check to reduce the rate of schema compatibility deployment failures to **0%**.

Plenty of Fish

Software Engineering Co-Op

Vancouver, BC

May 2022 – Aug 2022

- Reconstructed mobile web pages for profiles, preferences, and account settings, using **React**, to modernize the online dating experience for **1M+** daily users worldwide.
- Formulated REST API microservice endpoints, using **ASP.NET**, **Kafka**, and PostgreSQL, to introduce profile marketing features that boosted new user engagement by **12%**.
- Implemented unit and integration tests across the stack, using **Jest/Enzyme** and **XUnit/Moq**, to ensure program correctness and determinism with at least **80%** front-end and **98%** back-end code coverage.

Pentabyte Studios

Co-Founder & Project Lead

Richmond Hill, ON

Jan 2022 – Aug 2022

- Spearheaded the production of an open-world multiplayer role-playing game, built using Unity, the **Polygon** blockchain, and various **Azure** cloud services (AD B2C, Artifacts, Cosmos DB, Event Hubs, Functions, SQL, VM).
- Directed and coordinated design and development teams comprised of **10** ambitious employees.

PROJECTS

Upcoming 3D Battle Royale

- Developed and optimized an AES-encrypted multiplayer server, using **.NET UDP** sockets, to securely communicate complex real-time player movement data across network clients at less than **5 KB/s** per client.
- Incorporated a client-side prediction and server reconciliation algorithm to promote smooth **Unity (URP)** gameplay and server-driven state synchronization while consuming less than **1 ms** of time overhead per frame.
- Established an entity-component system to maintain project scalability via the separation of data and behaviours.

Automated Voice-Controlled Chessboard

- Programmed a stateful move-checking chess algorithm, in **C**, to guide gameplay on the physical chessboard.
- Consolidated move-checking, speech-to-text, and mechanical actuation subsystems, using **Python** on an **Arduino**, to allow stepper motors and the electromagnet to respond correctly to vocally issued move commands.

YRDSB Student Planner App

- Designed and built an **Android** student utility app, employing **Google/Twitter APIs** to fetch live updates related to school announcements and calendar events.
- Created a **.NET TCP** socket server that used **SMTP** to authenticate users through student email verification.

Ideal Gas Laws Simulation

- Contrived a 3D simulation of **500+** ideal gas particles, using **Java Swing**, to verify the mathematical relationship between the ideal gas laws and classical kinematic equations.

AWARDS

Bronze Medalist, Canadian Computing Olympiad (24/2827 in Canada to qualify)

May 2020

Invitee, Canadian Mathematical Olympiad (83/7000 in Canada to qualify)

Mar 2020

EDUCATION

University of Waterloo

Bachelor of Software Engineering

(Presidential Scholarship of Distinction)

Waterloo, ON

Sep 2021 – Present