

SIMON OU

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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, Firebase, GCP, Git, Grafana, New Relic, Octopus, Postman, RDP, Swagger, Unix

WORK EXPERIENCE

TOOLBX

Software Engineer

Software Engineering Co-Op

Toronto, ON

May 2023 – Present

Jan 2023 – Apr 2023

- Implemented, shipped, and maintained pricing, payments, and messaging features, using **React**, **Express**, **GraphQL**, and **PostgreSQL**, to serve e-commerce dealers who have product and customer data that vary across multiple store locations.
- Expanded search algorithms for product catalogues and delivery addresses, using libraries such as **Algolia** and Google's **Maps API**, to accommodate enhancements to the data schemas of **tens of thousands** of products and delivery locations.
- Engineered an autonomous integration for parsing PDFs, by building an **RPA** on an **Amazon EC2** instance, to extract and synchronize **hundreds** of daily invoices from e-commerce dealers operating with third-party ERP software.
- Devised a GraphQL schema compatibility check, built into a **GitHub Actions** CI/CD pipeline, to automatically prevent the deployment of non-backward compatible back-end changes.

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 **millions** of daily users worldwide.
- Formulated **REST API** microservice endpoints and data schemas, using **ASP.NET**, **PostgreSQL**, and **Kafka**, to introduce new profile marketing features to the Plenty of Fish dating platform.
- Designed and implemented unit and integration tests across the stack, using **Jest/Enzyme** and **XUnit/Moq**, to ensure that applications remained robust and reliable with at least **80%** front-end and **100%** back-end code coverage.

PROJECTS

Unreleased 3D Battle Royale

- Developed an end-to-end encrypted, centralized multiplayer server, using **.NET UDP** sockets, to allow clients to communicate with one another securely and in real-time.
- Crafted a 3D physics-bound, multiplayer-friendly character controller in **Unity (URP)**, enhanced with client-side prediction and server reconciliation to promote smooth gameplay while maintaining server-driven state synchronization.

Embedded Autonomous Voice-Controlled Chessboard

- Programmed and optimized a stateful move-checking chess algorithm, in **C**, to guide gameplay on the physical chessboard.
- Consolidated mechanical and software subsystems, using **Python**, to allow mechanical chessboard components to interact with the move-checking program and respond correctly to vocally issued move commands.

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