SIMON OU

www.simonou.com

linkedin.com/in/simon-ou   github.com/TripleSteak

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, TeamCity, Unix

WORK EXPERIENCE

TOOLBX   Toronto, ON
Software Engineer (May 2023 – Present)   *Jan 2023 – Present*
Software Engineering Co-Op (Jan 2023 – Apr 2023)

- Architected a multi-store customer messaging system, using React, Express, and PostgreSQL, to fulfill feature 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 CI/CD workflow to reduce the rate of API schema compatibility failures to **0%**.

Plenty of Fish   Vancouver, BC
Software Engineering Co-Op   *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   Richmond Hill, ON
Co-Founder & Project Lead   *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 an 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   Waterloo, ON
Bachelor of Software Engineering   *Sep 2021 – Present*
(Presidential Scholarship of Distinction)