

TRISTAN SIMPSON

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Education

The University of Guelph – 90% GPA

Sep. 2023 – May 2028

Honours Bachelor of Computing in Computer Science (Co-op) – Minor in Mathematics

Guelph, Ontario

Technical Skills

Primary Stack: TypeScript, React, Python, Go, SQL, Modern Full-Stack (Vite, tRPC, TanStack, Tailwind, etc.)

Alternative Stacks: Next.js, Angular, C/C++, Rust, Java

Cloud & Infrastructure: AWS, Azure, Terraform, Docker, Redis

Specialties: System Architecture, Performance Optimization, Project Management

Professional Experience

YNCU

May 2025 – Present

Full Stack Developer I (Full-time)

Kitchener, Ontario

- Led our Commercial Loan Origination System (CLOS): Drove design, development, data modelling, DevOps, security, and UAT; Integrated Fiserv DNA for real-time banking data — **Saved \$500,000 at launch and \$80,000 annually.**
- Led three key projects: Mortgage Campaign generating **100+ leads and \$30,000+ revenue**; Applicant Dashboard processing **1,000+ applications**; and Workspace Dashboard delivering a combined **\$22,000 annual cost savings.**

YNCU

Sept. 2024 – May 2025

Full Stack Developer I (Part-time)

Kitchener, Ontario

- Partnered with our CRM team to ideate & deploy our Account Opening System (AOS) with Salesforce, **enabling 1,000+ new online-originated memberships.**
- Designed, developed, and deployed our ID verification system in less than 2 months with Salesforce — processing **20,000+ IDs** and **eliminating 10,000+ hours of manual, in-branch verifications.**

YNCU

June 2024 – Sept. 2024

Full Stack Developer Intern (Full-time)

Kitchener, Ontario

- Led the refactoring and redesign of the entire YNCU Tools platform (20,000+ LOC), leveraging React Hook Form, Zod, TanStack, etc. — **10x performance, 5x codebase reduction, and dozens of accessibility improvements.**
- Led development of smaller applications with Go, reducing resource usage and improving performance.

Engineering Ambition

Dec. 2023 – June 2024

Lead Software Developer (Founder)

Guelph, Ontario

- **Led a team of 15 student software engineers and designers** in developing full-stack applications for companies, local organizations, and university clubs.
- Managed project timelines, DevOps with Azure, **reviewed and refactored team code, maintained systems, and coordinated team meetings**, brainstorm sessions, etc.

Dominion Lending Ltd.

July 2023 – Sept. 2023

Software Developer (Contract Full-time)

Waterloo, Ontario

- Led the development of our internal platform (Pulse) for social posts, event planning, secure document handling, team management, engagement analytics, org-wide notifications, and more.
- Led the design, development, and deployment of our corporate website and interactive analytics dashboard.

Projects

Hermes – Full Text Search and Caching Framework | *Go, Python, SQL, API, WebSocket*

2023

- Sub-millisecond full-text search responses (10-300 μ s) nearly **100x faster than competing services.**
- Complete thread-safe in-memory caching solution.

Verlet – Physics Engine | *C, C++, WinGL, SFML, OpenGL, Graphics*

2023

- Physics engine from scratch with C, C++, and the SFML graphics library .
- Inspired the development of my own C and C++ graphics libraries: **CGL** and **WinGL**.

Versa & Reborn Anti-Cheat | *Python, PyQt5, Rust, Discord Webhooks*

2023

- Real-time monitoring, screen capture, and program detection; all integrated with Discord Webhooks.
- Rewrote the entire engine in Rust (“Versa Reborn”), integrating HWID/IP spoofing, macro detection, and more.

Leadership / Extracurricular

Simpson Research

Fall 2021 – Present

Founder and Lead Developer

Waterloo, Ontario, Canada

- Collaborative platform dedicated to mutual learning and application of technologies, programming languages, and best practices in software design and development.
- **Published 200+ repositories** exploring Python, Go, React, TypeScript, Angular, database optimization, security protocols, and more.

Harvard, Stanford, MIT

Fall 2022 – Present

Student (Online)

Harvard, MIT, Stanford

- Consistently finding new courses to engage in.
- Completed Harvard CS50x (Computer Science), CS50P (Python), CS50W (Web Development), CS50AI (Artificial Intelligence); Stanford Compilers, Databases, CS101; MIT Machine Learning and Computer Science courses.
- Maintained **95%+** across all courses while pursuing a full-time undergraduate degree.

Google Developer Student Club

Fall 2023 – May 2024

Events Director and Software Developer

University of Guelph

- Directed events team, **secured sponsorships worth \$15,000+**, and organized nearly a dozen technical workshops, including the GDSC 2024 hackathon (150+ participants).
- Teamed up to develop the GDSC Hacks event registration system using Next.js, tRPC, Tailwind, PostgreSQL, Prisma, Google Cloud, and Docker; **handled 300+ registrations with zero downtime**.

STEM Fellowship

Fall 2023 – May 2024

Indicium Researcher

The University of Guelph

- Teamed up with 4 other students to research the **Travelling Salesman Problem (TSP)**, focusing on combinatorial optimization, heuristic algorithms, and approximation techniques.
- Collaborated on a **3,000+ line codebase** implementing optimization algorithms and visualizations; presented findings live to Indicium research competition judges.

Eclipse Expositions

Fall 2023 – June 2024

Software Developer

Waterloo, Ontario

- Coordinated projects with Jira; Designed and developed full-stack applications with Next.js, tRPC, Tailwind, PostgreSQL, Prisma, AWS, Docker, etc.
- **Spearheaded the migration of our backend from REST to tRPC**, and the development and deployment of the Eclipse Expositions React component library.