

Tanson Lee

Personal Website: <https://tansonlee.me>
GitHub: <https://github.com/tansonlee>
LinkedIn: <https://linkedin.com/in/tansonlee>
t227lee@uwaterloo.ca

Education

University of Waterloo, Bachelor of Computer Science

2020 - Present

- **Courses:** Operating Systems, Networking, Algorithms, Data Structures, Databases, Compilers, AI
- **GPA:** 3.98 / 4.0

Skills

- **Languages:** C++, C, Python, Typescript, JavaScript, Bash, GLSL, SQL
- **Technologies:** Kubernetes, Docker, Redis, Cassandra, PostgreSQL, gRPC, OpenGL, GraphQL, Node.js, React

Experience

Bloomberg

Sept 2023 – Present

Software Engineer — Manhattan, New York

- Built a **distributed caching microservice** supporting 30,000+ writes per second enhancing fault tolerance for the asset pricing system through snapshotting and failure recovery leading to a **95% reduction in pricing errors**.
- Developing a **distributed data-sharing system** which allows for parallel execution of pricing calculations across servers leading to a **300% improvement in calculation speed**.

Global Illumination (acquired by OpenAI)

Jan – Apr 2023

Software Engineer — Manhattan, New York

- Extended the **in-house physics engine** to support swimming and ladders, unlocking primitives for new game dynamics.
- Created realistic water reflections by developing **high-performance OpenGL shaders** using Screen Space Reflections.
- Redesigned the **NPC behavior microservice** to support Newtonian Physics, allowing for 3-dimensional NPC movement.
- Implemented fish and bird NPCs with realistic **flocking algorithms**, improving the visual appeal of the world.

Paper

May – Aug 2022

Software Engineer — San Francisco, California

- Designed and built an **auction system** for digital goods. Used Redis to decrease blockchain read times by 94% and message queues to decrease write failures by 95%.
- Overhauled the **authentication and authorization system** to support organizations with members and roles, improving collaboration for over 85% of customers.
- Built **localization infrastructure for the SDK** and added French support, expanding reach to European customers.
- Redesigned the **onboarding flow** to include checks for liveness, documents, and risk indicators for legal compliance.

Dreamschools

Sept – Dec 2021

Software Developer — Toronto, Ontario

- Created infrastructure for coupons, gift cards, refunds, and taxes in the payment system processing \$25,000+/month.
- Reduced tech debt in the checkout and financial reports, improving maintainability and shrinking module sizes by 45%.

Projects

Echo Cache – A distributed, in-memory caching solution

<https://github.com/tansonlee/echo-cache>

- Developed a distributed in-memory cache with scalability, fault tolerance, and a custom protocol to maximize performance.

PyScript – An interpreted & compiled programming language

<https://github.com/tansonlee/PyScript>

- Developed a turing-complete language with features including variables, functions, loops, conditionals, I/O, and comments.

Ray Tracer – A high performance ray tracing engine

<https://github.com/tansonlee/ray-tracer>

- Built a multi-threaded ray tracing engine in C++ with support for multiple materials such as metal, plastic, and glass.

Notifyr – A developer tool to notify your customers

<https://notifyr.vercel.app/>

- Created a developer tool suite with an SDK, API, dashboard, and docs to let apps send notifications to their customers.

Fooder – A collaborative food choice application

<https://fooderweb.netlify.app/>

- Built a real-time matching app that helps friends decide where to eat using web sockets and rooms.