Tanson Lee

Personal Website: https://tansonlee.me
GitHub: https://github.com/tansonlee
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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:** Redis, PostgreSQL, Numpy, OpenGL, GraphQL, Node.js, Three.js, Next.js, React
- **Tools:** Git, AWS, Linux, Stripe, WebSockets

Experience

Bloomberg   Sept – Dec 2023
Software Engineer — Manhattan, New York
- Current SWE for the Fall 2023 term on the **Fast Pricing Infra** team building a **distributed cache**.

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.
- Developed **player power-up infrastructure** using the Entity Component System architecture, expanding creative possibilities in minigames and questing.

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
- Managed all technical operations including code reviews, deploys, and providing technical guidance on business decisions.
- Created infrastructure for coupons, gift cards, refunds, and taxes in the checkout system which processes $25,000+/month.
- Reduced tech debt in the checkout, financial reports, and modals improving modularity and shrinking module sizes by 45%.

Sciex   Aug 2019
Software Developer — Toronto, Ontario
- Implemented a Snorkel labeling algorithm with Numpy, reducing sample analysis time by 98% for mass spectrometry data.

Projects

Ray Tracer   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.

PyScript – An Interpreted & Compiled Programming Language   https://github.com/tansonlee/PyScript
- Developed a scripting language with all core features including variables, functions, loops, conditionals, I/O, and comments.
- Implemented a compiler and assembler to translate down to a custom machine language which runs on a custom runtime.

Notifyr – Developer Tool to Notify Your Customers   https://notifyr.vercel.app/
- Created a developer tool with an SDK, API, dashboard, and documentation to allow apps to send notifications to customers.

Fooder – 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.