Tanson Lee

t227lee@uwaterloo.ca | tansonlee.me | linkedin.com/in/tansonlee | github.com/tansonlee

Education

University of Waterloo, Bachelor of Computer Science April 2025

- **Courses:** Real-time Programming, OS, Networking, Distributed Systems, Data Structures, Algorithms, AI
- **Major GPA:** 3.98 / 4.0

Skills

- **Languages:** Python, C++, C, Rust, Java, Typescript, JavaScript, Hack, Bash, SQL
- **Technologies:** Kubernetes, Docker, gRPC, Snowflake, Redis, Cassandra, PostgreSQL, Hadoop MapReduce, Apache Spark, OpenGL, GraphQL, NumPy, Node.js, React

Experience

Meta Sept – Dec 2024
Software Engineer Intern Menlo Park, California

- Developed a reliability platform to auto-generate E2E tests for revenue-critical ad events from production event traces covering 117 ad events with 9,761 tests protecting **$100M+** in annual revenue
- Built a config-driven data pipeline to alert on data corruption, ingesting **75TB/day** with optimizations saving 99.5% of storage, projected to prevent $10M+ in losses across 33 incidents and save 2,300+ engineering hours
- Enhanced reliability for core ad impressions service (**170B+ daily events**) through monitoring and alerting in revenue-critical workloads, reducing on-call overhead by 6 hours per week
- Proposed and gained approval for a retry mechanism in the ad impression cache, enhancing fault tolerance against underlying service outages and projected to save **$11.8M** per half

Snowflake Apr – Aug 2024
Software Engineer Intern San Mateo, California

- Optimized performance of database clustering for **6.84%** of tables by generating and **executing a parallelized query plan**, resulting in a performance improvement of **∼35%** for clustering and **∼25%** for table scan queries
- Reduced table scan costs by **∼30%** for tables with high insertion workloads by improving the clustering **file selection algorithm** through the consolidation of clustering stages

Bloomberg Sept – Dec 2023
Software Engineer Intern New York, New York

- Built a high-performance **distributed caching microservice** supporting 30,000+ writes per second enhancing fault tolerance for asset pricing, leading to a **95%** reduction in pricing errors
- Developed a **distributed data-sharing system** with gRPC which allows for parallel execution of pricing calculations across servers, leading to a **300%** improvement in speed

Global Illumination (acquired by OpenAI) Jan – Apr 2023
Software Engineer Intern New York, New York

- Extended the **in-house physics engine** to support swimming, climbing, ladders, and ice
- Created realistic water reflections by developing high-performance OpenGL shaders
- Redesigned the **NPC AI microservice** to support 3D Newtonian physics and added fish & birds to the world

Paper (acquired by Thirdweb) May – Aug 2022
Software Engineer Intern San Francisco, California

- Re-architected the authentication system to support **role-based access control** used by over 85% of customers
- Built **localization infrastructure** and added French support, expanding reach to European customers

Projects

- **Echo Cache:** A distributed in-memory cache with scalability and fault tolerance
- **PyScript:** A turing-complete language with variables, functions, loops, conditionals, and I/O
- **Ray Tracer:** A multi-threaded ray tracing engine in C++ with support for metals, plastics, and glass
- **Notifyr:** A developer suite for notification delivery including an SDK, API, dashboard, and documentation