Tory Chen

(+1) 647-710-8563 tory.chen@uwaterloo.ca linkedin.com/in/torychen/

Education

University of Waterloo **Sep 2021 – Apr 2026**

Bachelor of Computer Science — Dean's Honours *Waterloo, ON*

- **Overall Average:** 93.5%, **GPA:** 3.97/4.00
- **Scholarships:** B.P. Dammizio Entrance Scholarship, President Scholar of Distinction
- **Relevant Coursework:** Data Structures and Algorithms, Object-Oriented Programming, Application Development, Operating Systems, Compilers, Machine Learning, Statistical Analysis, Linear Algebra, Calculus, Numerical Computation

Technical Skills

Languages: Python, TypeScript, JavaScript, Objective-C, Swift, Java, Scala, C++, C, SQL, Bash, HTML, CSS
Technologies: React, Node.js, Django, Flask, LangChain, Spring Boot, Kafka, GraphQL, REST APIs, NoSQL
Developer Tools: Git, Linux, AWS, GCP, Kubernetes, Docker, Webpack, Postman, VS Code, Jupyter Notebook

Experience

Snowflake | Java, C++, SQL **Sep 2025 – Dec 2025**

Software Engineer *Menlo Park, CA*

- Optimizing the speed of the **SQL compiler** and the performance of queries through caching the query execution plan.

Rippling | Python, Django, TypeScript, React, Kafka, MongoDB **May 2025 – Aug 2025**

Software Engineer *San Francisco, CA*

- Migrated the Payroll data sync system to support multiple data sync flows across different teams and environments, reducing sync times from **4 hours** to **10 minutes** by leveraging a **Kafka** based event driven architecture.
- Architected and implemented a new **framework** for assigning payments to Payroll, utilizing **Python** and **MongoDB**
- Developed an internal tool that enables engineers to easily debug cross team data syncs, using **Django** and **MongoDB**.

X (Twitter) | Scala, Objective-C, Swift, GraphQL **Jan 2025 – Apr 2025**

Software Engineer *Palo Alto, CA*

- Re-engineered and improved the profile search feature that supports custom filtering using **Elasticsearch** and **Scala**.
- Built upsells on iOS with time based triggers, swapping functionalities and conducted **A/B** testing to identify customer preferences, leading to optimized monetization schemes that increased **ARR** by **30+ million USD**.
- Implemented support for identity verification through **Persona** and **Au10tix** in the iOS app using **Swift** and **GraphQL**.

IBM | Java, Python, Spring Boot, Kafka, Flink, MongoDB, Kubernetes **May 2024 – Aug 2024**

Software Developer *Toronto, ON*

- Designed a microservice based test coordinator system that automates regression testing for **350+** Kafka Streams apps on a **Kubernetes** cluster, integrating a **LLM** for schema mapping and **Java Flink Jobs** for data generation and validation.
- Built a **Kafka Streams** app that generates **110 000+** messages and deployed it on a **Kubernetes** cluster using **Helm**.
- Automated test script matching using **vector embeddings** and the **Reciprocal Rank Fusion** algorithm, saving **5 mins** per script.

IBM | Python, LangChain, Flask, Neo4j, AWS, GCP, Docker **Jan 2024 – Apr 2024**

Machine Learning Developer *Toronto, ON*

- Improved the accuracy of **RAG systems** for **LLMs** by **65%** by replacing the **vector database** with a **Neo4j** graph database that is integrated with **vector embeddings** and stores data chunks based on structure and hierarchy.
- Built a parser API that generates a hierarchical graph structure from .pdf and .docx files using **Python** and **Flask**.
- Developed a **LangChain** retriever and reduced **Neo4j** query times by **63%** through optimizing the **Cypher** queries.

YuJa | TypeScript, React, Express.js, Webpack, SQL, AWS **May 2022 – Aug 2022**

Software Developer *San Jose, CA*

- Built a custom synchronized webcam and screen video player that replays videos stored on **S3** using **React** and **Video.js**.
- Designed the **SQL** database schema that supports **230 000+** student users and wrote queries that monitored video processing, validated account data and authenticated user sessions using the **Sequelize ORM**.
- Improved video processing efficiency by **87%** by leveraging **Node Worker threads** to process videos concurrently.

Projects

Markdown Editor | TypeScript, React, Material UI

- Built a web based **Markdown** editor that compiles **Markdown** into **HTML** for display using **React** and **TypeScript**.
- Developed a **lexer** that scans the input and converts it into tokens by using a variant of the **maximal munch** algorithm.
- Implemented a **parser** that changes the lexer tokens into a valid **syntax tree** and used the tree to generate HTML.

Hobbies and Interests

- Soccer, Badminton, Swimming, Climbing, Poker, Chess, Hiking, Cooking