Brian Won

Software Engineer | ML-Inference & Systems

injongwbrian@gmail.com | (647) 220-7325 | injongwon.github.io

Education

University of Toronto Toronto, ON

*B.Sc. in Computer Science — **ML & Systems** | GPA: **3.74/4.0*** *May 2025*

- Teaching Assistant for **Operating Systems**, **Computer Networks**, and **Relational Algebra**.

Experience

Ontario Teacher's Association Toronto, ON

Research — Platform Scaling *Apr 2025 – Jul 2025*

- Engineered a production-ready **React/Node/Prisma/PostgreSQL platform serving 12k+** users with **99.9%** uptime across scoring workflows.
- Built secure **JWT-based REST APIs**, **RBAC**, and automated scoring pipelines, reducing manual workload by **80%**.
- Designed database schema and query strategies handling **100k+ scoring records** with predictable latency under peak submission loads.

Department of Computer Science Toronto, ON

Teaching Assistant — Computer Networks *2024*

- Delivered support focused on **networking fundamentals**, **OSPF/BGP routing**, and **TCP/UDP transport** layers.

RBC Capital Markets New York City

Software Engineer Intern — HFT *Sep 2023 – Dec 2023*

- Implemented a **modular DI-based testing framework** across **5+ latency-sensitive trading modules**, boosting coverage and reducing regression debugging time.
- Re-engineered a **trader-facing metrics platform** integrated with **CAS live-risk & pricing pipelines**; optimized **caching**, **data-fetch paths**, and UI flows, achieving **70% faster** load times and removing **100%** of manual data-entry overhead.
- Developed **real-time performance dashboards** monitoring **millions of daily transactions**, improving anomaly visibility for front-office users.

IBM Toronto, ON

Software Engineer Intern *May 2019 – Jun 2020*

- Developed components for **Watson Commerce** using **Angular + Node.js**, improving interactive responsiveness and UI consistency.
- Gained hands-on experience with **Kubernetes-based CI/CD pipelines**, assisting with deployment debugging, build monitoring, and reliability improvements that increased pipeline stability by **20%**.

Selected Projects

Algorithmic financial Time Series Research: Python **Quant — Markets**

- Built an end-to-end **Python-based quantitative research platform** for equities and futures, covering data ingestion, signal modeling, portfolio construction, and backtesting.
- Developed **portfolio optimization** workflows using **Markowitz mean-variance optimization** and Efficient Frontier analysis under realistic allocation constraints.

Technical Skills

– **Languages:** Python, C, C++, Rust, Java, TypeScript/JavaScript, Node.js
– **Frameworks:** Express.js, REST APIs, Microservices, React, Angular, TensorFlow, Pytorch
– **Systems:** Linux/Unix, TCP/IP, ARP, Ethernet, OS Internals
– **Infrastructure**: Git, Linux, Docker, Terraform, Firewalls