DAVID ZHANG

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EDUCATION

University of Toronto   Sept. 2022 – May 2026
BSc. Computer Science   **cGPA: 3.8/4.0**

Relevant Coursework	Algorithm Design & Analysis (**A+**), Theory of Computation (**A+**), Operating Systems (**A+**), Artificial Intelligence (**A+**), Software Design (**A+**), Programming Language Theory (**A+**)
Awards	Trinity College Peter Larkin Scholarship, Trinity College Drew Thompson Scholarship

SKILLS

Languages	Python, Java, C/C++, JavaScript/TypeScript, SQL, Bash, HTML/CSS, MATLAB
Technologies	Spring, Express.js, Node.js, MongoDB, MySQL, PostgreSQL, React, Angular, Git, Docker

WORK EXPERIENCE

University of Toronto, Department of Computer Science   Jun. 2025 – Present
Undergraduate Researcher – Theory Group   Toronto, ON

- Advisor: Allan Borodin. Topic: Exploiting stochastic randomness to beat the best real-time scheduling bounds
- Designed competitive, deterministic variants of 1-bit *barely random* online algorithms via random bit extraction in the Random-Order model

Teaching Assistant   Sept. 2024 – May 2025
- CSC384 Artificial Intelligence: Graded work on constraint satisfaction, knowledge representation, & Bayesian statistics
- CSC236 Theory of Computation: Taught tutorials of 40+ students on algorithm correctness, complexity & automata
- CSC207 Software Engineering: Taught tutorials of 40+ students on **Java**, OOP, SOLID & software architecture

Undergraduate Researcher – Lee Language Lab   May 2024 – Aug. 2024
- Developed a **React** & **Python** web application ↗ for neural machine translation across high- & low-resource languages

CIBC Capital Markets   May 2024 – Aug. 2024
Software Engineer Intern   Toronto, ON

- Developed a **Java Spring** stateless 2FA service authenticating **5k remittances/day** for Azure services
- Decommissioned a **MySQL** database used for transient session management, freeing **3 virtual machines** in production by migrating FX session contexts to a **MongoDB** cache
- Integrated **Bash** script to a **CI/CD** pipeline to auto-generate & deploy API docs to GitHub Pages on code commits

Software Engineer Intern   May 2023 – Aug. 2023
- Designed API architecture for a VISA integration, tripling remittance options and helping drive a **2M USD/mo.** money movement increase
- Resolved an end-to-end **Spring** cookie vulnerability using **TypeScript** & **Java**, safeguarding **20 million** card numbers by building a robust session invalidation API
- Optimized in-memory caching & eviction for metadata, reducing request execution time from **200ms** to **4ms**

Stealth   Jan. 2023 – Mar. 2023
Software Engineer Intern   Toronto, ON

- Increased throughput & compute resources by **40%** with **JavaScript** through query indexing & **Node.js** clustering
- Developed a Slack notification service for real-time incident alerts with **Express.js** & **MongoDB**, increasing timely completion of vulnerability tickets by **24%**

PROJECTS

Automated Trading System | *C++, MATLAB, Python*
- Intraday equity arbitrage & trend-following via the Interactive Brokers API

HTTP Web Server | *C++*
- Multithreaded web server using **C++** with a fixed-size worker thread pool for concurrent HTTP requests