Alex Lee

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EDUCATION

- **University of Toronto** — **cGPA: 3.95/4.00**
  Bachelor of Science in Computer Science, Minor in Mathematics | Dean's List — *Expected Jun. 2026*
  - **Courses**: Software Tools & Systems Programming, Data Structures & Analysis, Computer Organization, Operating Systems, Programming on the Web, Computer Networking Systems, Foundations of Computer Security

SKILLS

- **Languages**: C, Python, Java, C#, JavaScript, TypeScript, HTML/CSS, SQL, Bash
- **Frameworks and Tools**: Unix, Git, Microsoft Azure, PostgreSQL, React, Tailwind CSS, Next.js, NumPy, Flask

EXPERIENCE

- **Department of Mathematics, University of Toronto** — Toronto, ON
  Teaching Assistant — *Jan. 2025 - Dec. 2025*
  - Assisted in the instruction of **Linear Algebra** I (MAT223), a course with **1000+** enrolled students
  - Conducted office hours, monitored the online discussion board, and answered student questions for a class of **100+** enrolled students
  - Facilitated weekly tutorials and grade weekly quizzes for two sections with **80+** students in total

- **Microsoft** — Redmond, WA
  Software Engineer Intern — *May 2025 - Aug. 2025*
  - Created a plugin in **C#** to automate update rollouts for a certificate-based authentication library used in **500+** repositories company-wide
  - Implemented a **GPT-4o**-powered solution for detecting and updating security vulnerabilities, utilizing **Azure AI Foundry** and regex-based pattern matching
  - Automatically identified and updated **1500+** lines of code across **80+** repositories with **90%** accuracy
  - Reduced update rollout time by **60%**, minimizing manual effort and improving consistency across codebases

- **Microsoft** — Redmond, WA
  Software Engineer & Product Manager Intern — *May 2024 - Aug. 2024*
  - Designed and developed a customer support **AI** chatbot in **Python** for a querying service keeping track of **100 billion+** certificates and secrets used across the company, leveraging **Azure OpenAI** resources
  - Integrated **retrieval-augmented generation (RAG)** with embedding models and vector search, enabling dynamic data retrieval and an optimized **<3 second** response latency
  - Optimized granularity and chunking size of search indexes, improving chatbot response accuracy by **30%**

PROJECTS

- **Calculus Derivative Calculator** | *Python, HTML, CSS, JavaScript, Flask, MathJax* ☐ ☐
  - Capable of **differentiation with complete steps** and algebraic simplification, built **completely from scratch** without using any math-related libraries
  - Implemented in Python using binary expression trees and **self-designed recursive algorithms** for calculation, and the shunting yard algorithm for parsing mathematical expressions
  - Utilized **MathJax** for displaying visually appealing mathematical expressions in the frontend

- **KnowYourBias** | *Python* ☐ ☐
  - An **AI** web app that detects the political bias of the news article the user submits, and presents other articles on the same topic with different viewpoints
  - Used APIs from NewsCatcher and **Amazon AWS** for article search and keyword extraction