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, Theory of Computation, Operating Systems, Advanced Calculus
  - **Societies**: University of Toronto Machine Intelligence Student Team

SKILLS

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

EXPERIENCE

- **Microsoft**   Redmond, WA
  Incoming Software Engineer Intern   *May 2025 - Aug. 2025*

- **Department of Mathematics, University of Toronto**   Toronto, ON
  Teaching Assistant   *Jan. 2025 - Apr. 2025*
  - Assisting in the instruction of **Linear Algebra** I (MAT223), a course with **1000+** enrolled students
  - Conducting office hours, monitoring the online discussion board, and answering student questions during lectures for a class of **100+** enrolled students

- **Microsoft**   Redmond, WA
  Software Engineering & Product Management (Explorer) Intern   *May 2024 - Aug. 2024*
  - Designed and developed a customer support **AI** chatbot for a querying service keeping track of **100 billion+** certificates and secrets used across the company
  - Leveraged **Azure OpenAI** resources to create a **GPT-3.5**-powered solution, optimizing chatbot response latency to **<3 seconds**
  - Implemented **retrieval-augmented generation (RAG)** to facilitate dynamic, up-to-date data retrieval using embedding models and vector search
  - 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

- **Jang-gi (Korean Chess)** | *Java* ⌐
  - Implemented game logic leveraging the principles of object-oriented programming
  - Designed and implemented an easy-to-use graphical user interface utilizing **Java Swing**, allowing for a seamless user experience

- **Atlas News** | *Python, Flask, SQLAlchemy* ⌐
  - A decentralized news website that allows users to stay up-to-date with events around the world complemented with a discussion forum
  - Managed database storing user and article data with **SQLAlchemy** and hosted website using **Flask**