

Zain Salman

✉ zain.salman@uwaterloo.ca ☎ +1 (647)-962-8159 🔗 zains.dev in zain-salman 🌐 zainjamin

TECHNICAL SKILLS

- **Languages:** C++, JavaScript, TypeScript, Python, Dart
- **Frameworks:** React, Tailwind CSS, REST, MobX, NodeJS, ExpressJS, Flutter
- **Tools:** Git, L^AT_EX, Unity, Unix

EXPERIENCE

- **Incoming Software Engineering Intern** New York, NY
Hudson River Trading May 2026 - Aug 2026
- **Incoming Research Intern** Toronto, ON
Waabi Jan 2026 - April 2026
- **Software Engineering Intern** New York, NY
Bloomberg May 2025 - Aug 2025
 - Identified patterns in dividend dates for over 27,000 companies through data analysis in **Python** using **pandas**, covering over 70% of all tracked companies.
 - Verified identified patterns against over 11,000,000 existing analyst forecasts from a **NoSQL** database, finding each pattern was used at least 70% of the time and confirming the applicability of the selected patterns.
 - Developed a Python-based containerized service that consumed corporate action updates from a real-time data stream to automatically re-compute dividend date patterns, ensuring the identified patterns remained accurate.
- **Mathematical Algorithms and Machine Learning Developer** Montreal, QC
InfinityQ Sep 2024 - Dec 2024
 - Designed a solution for convex quadratic optimization problems with constraints using **NumPy/SciPy** in **Python**, improving solve time for a large customer problem from 7 minutes to 40 seconds, a **10x** speed up.
 - Developed support for sparse matrices in a **C++** optimization solver using **Eigen**, resulting in an **8x** performance increase and a **12x** decrease in memory usage, helping solve customer problems with over 100k variables.
 - Implemented a state-of-the-art algorithm for **adaptive parallel tempering** in C++, eliminating the need to tune temperature values per problem instance.
- **Software Developer Co-Op** Kitchener, ON
TD Lab - TD Bank Jan 2024 - April 2024
 - Designed a custom **Unity** shader in **HLSL** to simulate colour blindness in VR by converting to the LMS colour space and applying a matrix transformation.
 - Implemented designs for web applications by creating modular components in **React**, following Atomic Design.
 - Created rapid prototypes for cross-platform mobile applications using the **Flutter** framework in **Dart**.
- **Junior Software Engineer** Toronto, ON
Red Thread Innovations May 2023 - Sep 2023
 - Created a platform to design web applications, decreasing development time for future projects by **150%**.
 - Implemented Atomic Design using **React** components exported from **Figma**.
 - Quickly learned **ExpressJS** and **NodeJS** to develop a **RESTful** backend service.

AWARDS

- Awarded the **Schulich Leader Scholarship** in May 2022: An award of \$80,000 given to an entrepreneurial-minded student entering a STEM university program. Offered by the University of Toronto
- Awarded the **First in Class Engineering Scholarship** in August 2024, November 2024, August 2025: An award of \$500 given to the student in their engineering class with the highest overall average in an academic term.

EDUCATION

- **University of Waterloo** Waterloo, ON
Bachelor's of Software Engineering and Pure Math: 97.97% Cumulative Average Sep 2022 - April 2027