

# Fred Liu

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## EDUCATION

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- **University of Waterloo** Ontario, Canada  
*Candidate for Bachelors in Computer Science; GPA: 3.97/4.00* *Sep. 2020 - Apr. 2025*

## EXPERIENCE

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- **Super.com** Toronto, ON  
*Data Engineer Intern* *May 2023 - Aug 2023*
  - Architected and implemented a scalable data pipeline factory integrated with SmartSheet to easily provide new metrics on demand, streamlining data entry and collaboration with suppliers
  - Orchestrated a seamless upgrade of DBT from 1.0 to 1.6 requiring coordination of the data team, attention to detail and devising a rapid and safe rollback plan. The upgrade significantly enhanced Super.com's data processing capabilities
  - **Researched and executed cost-saving initiatives, achieving a reduction of over \$50,000 annually:**
    - \* Developed an in-house data connector to migrate completely away from Stitch, saving \$16000 from SAAS costs
    - \* Optimized AWS S3 storage space by carefully applying lifecycle rules, reducing storage by 30%
- **Titanium Agency** Waterloo, ON  
*Full Stack Developer Intern* *Sep 2022 - Dec 2022*
  - Redesigned backend-database interactions by modifying queries to minimize data transfer and use stored procedures, accelerating pagination, filtering and sorting speeds by 5 times
  - Developed a custom loading bar framework using a WebSocket connection between the frontend and backend, integrated in many pages in the app and enhancing user experience for timely operations
  - Built a new webpage interacting with Facebook Business API for bulk ad cloning
- **Wish** San Francisco, CA  
*Data Scientist Intern* *Jan 2022 - Apr 2022*
  - Engineered an end-to-end ETL data pipeline for automated data visualization of app notification metrics on Tableau, utilizing attribution data models to measure notification engagement.
  - Conducted an analysis of anomalies in user retention, discovering a crucial bias under advertising dimensions. This proved there was an actual 7% increase in the north star metric, improving employee morale
  - Standardized data definitions and shared templated SQL in collaboration with other data analysts, expediting future data analysis of notifications and reducing errors and inconsistencies in the metrics
- **Nokia** Ottawa, ON  
*Software Developer in Test Intern* *May 2021 - Aug 2021*
  - Curiously explored the system to identify obscure and critical bugs, including memory leaks and data loss, receiving very positive feedback during customer trials
  - Automated REST API tests that were integrated into CI, reducing future testing efforts

## PROJECTS

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- **FredZip:** 55% compression ratio on text files by implementing and combining Huffman and LZ77 algorithms

## AWARDS

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- **Best-In-Class at Super.com:** \$2000 awarded for exceptional performance among cohort of 66 interns
- **Senior Canadian Computing Contest(CCC) Honor Roll:** Placed top 4% among contestants

## SKILLS

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- **Languages:** Python, SQL, C/C++, C#, Javascript, HTML & CSS, Java, R
- **Technologies:** Airflow, Snowflake, Pandas, Flask, NodeJS, Vue, MongoDB, MySQL, Presto, Spark, ASP.NET
- **Tools:** AWS, GCP, Git, Tableau, Jira, Postman, Atlan, Fivetran