

# Siyu (Sylvia) Liu

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## EDUCATION

### University of Waterloo

Waterloo, ON

*Bachelor of Computer Science, Major in Computer Science*

Sep. 2018 – Dec. 2022

- Relevant Coursework: Operating Systems (C), Object-Oriented Software Development (Linux, C++), Data Structures and Management, Algorithms, Numerical Computation (Python), Computational Vision (Python), Distributed System (C++), Computer Security and Privacy (C++)

### Wilfrid Laurier University

Waterloo, ON

*Bachelor of Business Administration, Concentrated in Finance, Minor in Economics*

Sep. 2018 – Dec. 2022

- Relevant Coursework: Business Analytics (Python, R), Financial Markets & Security Trading,

## WORK EXPERIENCE

### Back-End Engineer Intern (Co-op) | TikTok

Sep. 2021 – Dec. 2021

- Integrated new payment services to the company's distributed global payment core system using **Go**.
- Implemented retry and backup recovery mechanisms for bank-related payment services; eventually **reduced network-related transaction failures to zero** and lowered operation team's workload significantly.
- Collaborated extensively with the external partners, the product team, and colleagues to build reliable payment-collection instruments for **more than 30,000 cross-border e-commencers**.

### Back-End Developer Intern (Internship) | ByteDance

Apr. 2021 – Jul. 2021

- Worked with the infrastructure team to implement a mock system using **Java** and **Go** to mock responses and callback messages from external payment channels, which **saved 30% of testing time for QA teams**.
- Developed a methodology for comprehensive self-testing that combined the mocking system and automated testing, which was **adopted by the entire payment development team**.
- Wrote unit tests for Java and Go services using Mockito and GoMock framework; set up CI pipelines for these services to ensure **unit test code coverage reaches 80% for every new merge request**.
- Recognized as the best-performing intern among all eleven interns in the team.

### Back-End Developer Intern (Co-op) | ByteDance

Jan. 2021 – Apr. 2021

- Worked on the company's distributed payment system using **Java** and **Go**.
- Collaborated with the product team to support innovative payment solutions by building new APIs and services using Spring MVC, Kite/KiteX, and Apache Thrift.
- Rewrote Java callback web service using Go; redesigned the service structure using RocketMQ for asynchronous decoupling and modified the querying logic to reduce **MySQL disk I/O**, eventually **doubled the system's throughput and reduced response time by 23%**.
- Held two information sessions about payment solutions commonly used in the e-commerce industry.

### Market Research Analyst (Co-op) | StarTech.com

Jan. 2020 – May. 2020

- Conducted, implemented, and automated different research projects using **Python**, **R**, Excel, and Power BI.
- Automated data collection process using Python, web scraping and anti-scraping techniques, which improved **efficiency by more than 70%, data richness by 80%, and data accuracy by 11%**.
- Optimized data validation process by applying various machine learning models, hyperparameter tuning, and model validation methods to categorize 822 products/SKUs into six categories with **overall 92% accuracy**.

### Academic Tutor (Part-time) | Tintin App

Mar. 2020 – May. 2020

- Tutored five international high school students **Java** and prepared them for AP Computer Science A exam.
- Topics covered: OOP, searching & sorting algorithm, basic data structures, and SDLC.
- **All students passed the exam, and four of them achieved "very well qualified" or above.**

## SKILLS

- **Proficient:** Go, Java, Python, C, C++, SQL, Linux
- **Familiar:** R, HTML, CSS, JavaScript, PHP, Hive