

# Zachary Koo

(403) 991-1833

[zmhkooseng@gmail.com](mailto:zmhkooseng@gmail.com)

Website: [zacharykoo.github.io/zacharykoo](https://zacharykoo.github.io/zacharykoo)



[github.com/zacharykoo](https://github.com/zacharykoo)

[linkedin.com/in/zachary-koo](https://linkedin.com/in/zachary-koo)

## EDUCATION

**University of Calgary (GPA: 3.67)** - Bachelor of Science in Computer Science and Biological Science

**Senshu University (GPA: 3.92)** - Japanese Exchange program from 2018-2019

## SKILLS

**Languages:** Java, C, C++, Haskell, Python, Go, SQL, Javascript(Vue, Angular), PHP **Technologies:** Git, Linux

## WORK EXPERIENCE

### Full Stack Engineer - Honest Empathy

September 2022 - CURRENT

- Use front-end frameworks (**React JS**) to build modular screens. Implement testing and responsive design patterns and ensure compatibility with mobile-apps.
- Use REST API frameworks including Node, Express and Sequelize to build endpoints and relational models in a multi-tenant database architecture.

### Student Enrollment System - University of Calgary

August 2022 - September 2022

- Modifying web-enabled, group-scheduling system for University of Calgary, allowing students to view and print schedules for current and future semesters using **PHP** and **C#**.
- Innovated time-saving, robust data-intake system that automates and modifies databases using **MySQL**.

### Computer Science teacher assistant (CPSC 413: Design and Analysis of Algorithms I) - University of Calgary

August 2022 - CURRENT

- Partnered with professors to deliver a range of teaching and assessment activities including tutorials directed towards the subject of design and analysis of algorithms at undergraduate level.
- Course content includes techniques for the analysis of algorithms (greedy methods, divide and conquer, dynamic programming), including counting, summation, recurrences, and asymptotic relations.

## PROJECTS

### EcommerceWebApplication - <https://github.com/zacharykoo/EcommerceWebApp>

January 2022 - May 2022

- Created backend database management using GORM, repository and query using SQLite. API handlers and services for the E-commerce application are created in **Golang**.
- Established frontend connection with API GET, SET and POST requests using Angular.
- Optimized SQL query performance by 23% by implementing better query statements and predicates.

### DistributedSystem - <https://github.com/zacharykoo/DistributedSystem>

February 2022 - May 2022

- Peer-to-Peer Distributed system created using B-multicast algorithm which contains a peer process and a registry process in **Java**
- Implemented system communications using paradigms, including fault tolerance and coordination with timed systems paired with ACKs
- Connection is established by UDP Datagram socket and can handle a minimum of 121 users request concurrently with at most 7.76 ms delay

### Self-checkout software - <https://github.com/zacharykoo/selfcheckoutProject>

January 2022 - April 2022

- Created item-scanning and payment method functions for the Self-Checkout System which scans items in the database by using PLU code or scanning Barcode paired with respective observers.
- Leader of the backend team for 13 other students and organized work tasks for each group.
- Each component of the software is tested and has 100% unit test coverage to ensure the application is functionally implemented using **Java**

## EXTRACURRICULAR ACTIVITIES:

### Competitions and Certificates:

- Alberta Collegiate Programming Contest - 12th (2020)
- Calgary Collegiate Programming Contest - 6th (2021)
- Japanese (N2) language test (2019)