Dylan Cheng

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TECHNICAL SKILLS

Frameworks & Tools: Spring, React, Redux, Node.js, Redshift, PostgreSQL, Next.js
Languages: Java, C/C++, Python, Golang, JavaScript, Typescript, GraphQL
Development Tools & Libraries: Git, Linux, Vim, Tailwind CSS, Material UI

EDUCATION

University of Toronto   September 2020 – Present
Bachelor of Applied Science in Computer Engineering   *Toronto, ON*
Relevant Courses: Operating Systems, Data Structures and Algorithms, Networks, Distributed Systems

EXPERIENCE

Software Engineering Intern   May 2023 - Present
Zynga   *Toronto, ON*
- Owned, completed, and documented a **JIRA-Github** integration involving 8 repositories
- Created a **distributed locking solution** with **PostgreSQL** and **Spring JPA** for a yaml synchronization flow involving concurrent database mutations across multiple server instances
- Actively participated in code reviews and successfully identified and amended redundancy in a database schema
- Implemented a full user settings flow using **Spring** and **GraphQL** to model the database and authenticate users, then created UI components with **React** and used **Redux** to manage global user state
- Developed a synchronization flow involving **150,000 assets** to and from **Amazon Redshift**, yaml files, and a **PostgreSQL** database

Software Engineering Intern   May 2022 - August 2022
Bloom   *New York, NY (Remote)*
- Built an internal web service involving **REST API** endpoints using **Node.js**, **PostgreSQL**, and **JavaScript** to accumulate and visualize metrics for performance, demographic, and revenue for each client
- Deployed Bloom's algorithm to **7 clients'** websites with **asynchronous JavaScript**, and improved its performance by **decreasing latency** on initial mount to client websites
- Designed a reusable **A/B testing** API used by Bloom's algorithm on client product pages

PROJECTS

Java Distributed System | *Java*   January 2023 - April 2023
- Designed a multi-client, multi-server, multi-threaded distributed key-value store in Java that implements consensus algorithms, failure detection, failure handling, distributed mutual exclusion, and consistency mechanisms
- Created a **consistent hashing** mechanism using an **MD5-encoded** ring topology with socket communication
- Implemented a **heartbeat failure detection** mechanism and **Lamport leader election algorithm** for server failure detection and a replication-based recovery strategy

Square Booking App | Github | *Next.js, Firebase, Square APIs, Material UI*   August 2022 - September 2022
- Designed a booking application in Next.js to mitigate the challenges of online booking for Square sellers
- Used **Firebase Authentication** and **Firestore** to verify, store, and query customer information
- Used **server-side rendering** to pre-load business and service-related information into React components

Student Life Mapper | GitFront | *C++, GTK, OpenStreetMap*   January 2022 - May 2022
- Designed a **GTK** mapping application in **C++** which accesses data from the **OpenStreetMap API** to map out cities, and which can perform optimal route navigation
- Developed a grid clustering algorithm to dynamically group points of interest on map pan
- Implemented **A*** and **multi-Dijktra** path-finding algorithms using **C++ STL containers** for route navigation

INTERESTS

Hobbies: cello, piano, alto saxophone, running, tennis, cooking, coffee-making
Professional Interests: distributed system development, web development, cloud technologies