Dylan Cheng

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Technical Skills

Frameworks & Libraries: Spring, React, Redux, Node.js, Next.js, Tailwind CSS, Material UI, Click
Languages: Java, C/C++, Python, Golang, JavaScript, TypeScript, GraphQL
Database Management Systems: Amazon Redshift, PostgreSQL, Firebase
Development Tools: Git, Linux, Vim, VS Code, IntelliJ, PyCharm

Education

University of Toronto, Bachelor of Applied Science in Computer Engineering — September 2020 – April 2025
Relevant Courses: Operating Systems, Networks, Distributed Systems

Experience

Zynga, Software Engineer Intern — May 2023 - Present

- Owned, completed, and documented a **JIRA/GitHub** integration involving **8 repositories**
- Developed a **distributed locking solution** with **PostgreSQL** and **Spring JPA** for a YAML sync flow involving concurrent database mutations across **3 Kubernetes pods**
- Built a user settings flow by creating UI components using **React** with **Redux**, and using **Spring** and **GraphQL** to model a database and authenticate users
- Created a sync flow to import/export over **150,000 assets** between **Amazon Redshift**, and a **PostgreSQL** database
- Pitched and developed a CLI tool in **Python** that initializes a full-stack template application which can deployed to **Amazon EKS** (added to organization roadmap)

Bloom, Software Engineer Intern — May 2022 - August 2022

- Built a microservice for the Growth team with **Node.js**, **PostgreSQL**, and **JavaScript** to visualize metrics for performance, demographic, and revenue
- Integrated a machine learning algorithm into **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 with asynchronous JavaScript, and deployed it to client product pages

Projects

Java Distributed System

- Designed a 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*

- 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*

- 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

Cello, Piano, Alto Saxophone, Running, Tennis, Badminton, Cooking, Coffee-Making