Dylan Cheng

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TECHNICAL SKILLS

Frameworks & Tools: React, Next.js, Node.js, Firebase, PostgreSQL, Docker
Languages: C, C++, Python, Java, JavaScript(ES5 and ES6), ARM Assembly Programming
Development Tools: Git, Linux, Vim

EDUCATION

University of Toronto — September 2020 – Present
Bachelor of Applied Science in Computer Engineering + PEY Co-op — *Toronto, ON*
Relevant Courses: Operating Systems, Data Structures and Algorithms, Software Design, Networks, Distributed Systems

EXPERIENCE

Software Engineering Intern — May 2023 - Present
Zynga — *Toronto, ON*

Software Engineering Intern — May 2022 - August 2022
Bloom — *New York, NY*

- Worked in a full-stack capacity to build internal tooling and **REST API** endpoints using **Node.js** and **PostgreSQL** to accumulate and visualize metrics for performance, demographic, and revenue for each client
- Added functional improvements to Bloom's client-facing dashboard using **React**
- Integrated Bloom's algorithm into **7 clients'** websites with asynchronous JavaScript, and improved its performance by **decreasing its latency** on initial load to client websites
- Architected and deployed an interactive mobile-customer-facing interface to the PE Nation AU site
- Structured a reusable workflow for **A/B testing** with 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 system in Java that implements consensus algorithms, failure detection, failure handling, distributed mutual exclusion, and consistency mechanisms
- Created a ring-based consistent hashing mechanism using an MD5-encoded hashring
- Implemented a failure tolerant replication strategy for the ring-based topology
- Implemented a heartbeat failure detection mechanism and Lamport leader election algorithm for server failure detection and recovery

Square Booking App | Github | *Next.js, Firebase, Square APIs, Material UI* — August 2022 - September 2022

- Designed a functional 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
- Scheduled and queried bookings and available services from the Square seller dashboard using Square APIs
- 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
- Optimized map loading time through data prioritization and **multi-threaded computation**