Dylan Cheng

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Skills

Languages: Java, C/C++, Python, JavaScript, TypeScript, GraphQL, HTML, CSS
Frameworks & Libraries: Spring, React, Redux, NodeJS, NextJS, Flask, Tailwind CSS
Development Tools: AWS, Docker, Kubernetes, PostgreSQL, Jenkins, Terraform, Git

Experience

Zynga, Software Engineer Intern · *Java, Python, React, Docker, Kubernetes, AWS, IAM, Jenkins* May 2023 - April 2024

- Developed a system to synchronize database access across Kubernetes pods—**reducing data conflicts to 0**
- Created a **metrics tracking library** for Spring Boot and Flask, enabling logging of user metrics across 3 microservices to a data visualization dashboard on Splunk
- Architected a containerization solution to 50% of the team's CI/CD pipelines, allowing for automated unit tests and SonarQube analysis within a **Docker-in-Docker Jenkins setup**
- Designed a time-activated data management system to **import 150,000 assets** between Redshift and RDS, guaranteeing data consistency across microservices
- Created a user settings administration flow including authentication, database schema design, and API endpoints which interfaced through React components and Redux state

Besty AI, Software Engineer Intern · *JavaScript, Python, React, Node.js, PostgreSQL* May 2022 - August 2022

- Integrated a machine learning algorithm into **7 clients'** websites, and improved its performance using asynchronous JavaScript calls to **decrease latency by 20%** on mount to client websites
- **Reduced product integration time by 15%** by pioneering a reusable A/B testing API to eliminate the need for manual testing in the product integration process

Projects

Parla · GitHub · *React, Flask, Cohere, Google Cloud, EC2, Route53, Nginx*

- Created an **AI language-learning tool** that gives oral speech feedback—backed by a **serverless API on AWS Lambda**
- Leveraged a speech-to-text API via a Flask backend to convert audio into machine-readable input, and trained a machine-learning model to discern subtle nuances in natural speech

Student Life Mapper · GitFront · *C++ STL, GTK, OpenStreetMap*

- Designed a graphical mapping application in C++ which accesses city data from the **OpenStreetMap API** to generate graphics for roads and buildings, and can perform optimal route navigation using pathfinding algorithms
- Innovated a **grid clustering algorithm** to dynamically group over 1000 locations on map pan in linear time
- Implemented **A* and multi-Dijktra** pathfinding algorithms using STL containers for route navigation, and traveling salesman optimization

Java Distributed System · Java

- Led a team of 3 in designing a **multi-threaded distributed key-value store** that implements consensus algorithms, failure detection, fault tolerance, mutual exclusion, and consistency mechanisms
- Produced a consistent hashing mechanism using an **MD5-encoded ring topology** with socket communication
- Conceived a **heartbeat failure detection** mechanism and **Lamport leader election algorithm** for server failure detection, and a replication-based recovery strategy

Education

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

Certificates

Amazon Web Services, Solutions Architect Associate June 2024
Services: EC2, ECS, EKS, S3, SQS, Kinesis, IAM, RDS, Cloudfront, Lambda