


# Howard Zhong

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## EXPERIENCE

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### Fullstack Development Intern

Sep 2023 – Dec 2023

*Norfolk Southern Corporation*

*Atlanta, GA*

- Developed an industry-leading customer facing portal: Implemented new and refactored existing **Spring Boot** RESTful APIs, carried out frontend development with **JavaScript** in Agile workflow
- Built a **Java** pipeline and algorithms to migrate 800+ customer reports to new database and backend service
- Worked with tech lead to finalize the new database schema design, optimize the **SQL** scripts, write technical docs, and debrief stakeholders in the Sprint Review
- Utilized **Jenkins**, **OpenShift** CI/CD pipelines to configure stages and jobs for automated build and deployment

### Lead Backend Developer, Part-time

Aug 2023 – Present

*URSearch, a start-up funded by UW-Madison*

*Remote*

- Lead a team to build, integrate and test **APIs** of a lab recruitment platform with **Golang/PostgreSQL**
- Orchestrate a micro-service structure to synthesize the **Golang** backend, **Python** algorithms, and file storage respectively with **Azure** Container App, Serverless Function, Blob storage and PostgreSQL database
- Parallel requests through **Go routines** & channels, optimizing query performance by 57%
- Apply **DevOps** integrations with **Microsoft Azure**, **Docker**, **Github Actions** to perform CI/CD

### Software Engineer Intern

June 2023 – Aug 2023

*Liba LLC*

*Sunnyvale, CA*

- Refactored **Java Spring Boot** codebase of e-commerce order and promotion services according to **MVC & Domain-Driven Design** principles, to optimize the performance of high-throughput system
- Revised the optimistic-lock in **MySQL**, avoiding stock inconsistency risks arising from concurrent orders
- Deployed **Redis** for high throughput scenarios like Flash Sales, improving performance from 500 to 50,000 QPS
- Designed peak-load shifting for order service by asynchronously creating orders using **RocketMQ**

### Tutor | CS300: Programming II

Jan 2022 – May 2022

*UW-Madison*

*Madison, WI*

- Led weekly meeting which covers topics including sorting algorithms, data structures, OOP in **Java**
- Developed question sets and helped students with course projects coded with **Java**

## PROJECTS

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### Distributed Crowdfunding Platform | Fullstack

Mar 2023 - May 2023

- Developed an account-based **distributed system**, leveraging **Python Flask** for inter-node communication
- Utilized deterministic block hashing and transaction history to ensure distributed system integrity and security
- Established connection between self-hosting distributed system with **Ethereum** network and Metamask wallet
- Built a **Next.js** frontend with **Redux**, NextAuth and Web3.js, Ethers.js for fundraiser and contributor to use

## TECHNICAL SKILLS

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**Languages:** Java, Python, Go, JavaScript, Typescript, SQL, Bash

**Frameworks:** Spring Boot, Redis, RocketMQ, Kubernetes, PyTorch, Spark, Gin, ORMs, React, Next.js, Redux

**Developer Tools:** Git, Jmeter, Maven, Postman, Azure, AWS, Jenkins, Docker, Jira, Figma, MongoDB, ServiceNow

## EDUCATION

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### University of Wisconsin–Madison

*Master of Science - Computer Science, GPA: 3.91*

*Sept 2022 – May 2024*

### University of Wisconsin–Madison

*Professional Certificate Program - Computer Science, GPA: 3.85*

*Sept 2021 – May 2022*

### Civil Aviation University

*Bachelor of Engineering (Honors) - Transportation, GPA: 3.51*

*Sept 2017 - June 2021*