Chengzhu Duan

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EDUCATION

University of California, San Diego *La Jolla, CA*
Computer Science, B.S. *Sept. 2017 – Mar. 2021*
GPA: 3.80 / 4.00 (Cum Laude)

WORK EXPERIENCE

Coinbase *San Francisco, CA*
Software Engineer *Apr. 2021 – Present*

- Integrated third party exchange APIs to increase liquidity options for institutional clients using Coinbase Prime, generated **$87B+** in total trading volume
- Built scalable and fault-tolerant services to reliably place, track, and recover **10K+ orders per second** with **data sharding** and **failover redundancy** techniques implemented in **Go**
- Designed and scaled the market data service to deliver high fidelity price book for **500+** trading pairs within **30ms** of latency
- Scoped and implemented reusable and extensible framework for novel work to increase **developer productivity** and **code maintainability**

Coinbase *San Francisco, CA*
Software Engineer Intern *Jun. 2020 – Sept. 2020*

- Streamlined an in-app invoice workflow for Coinbase Prime that saved finance and operation team **40** hours of phone call per week, claimed back **$350K** unpaid invoice, and provided **800+** Custody Organizations with timely invoices
- Built scalable backend automatic billing service, invoice service and email notification service with **Ruby on Rails**
- Ensured fast UI load time with proper frontend caching through **Rest Hooks** and **SWR**
- Automated Custody invoice PDF generation and storage in **AWS S3** with the use of **Rails ERB template** and **Puppeteer**

**Omniscience Corporation** *Palo Alto, CA*
*Software Engineer Intern* *Jul. 2019 – Sept. 2019*

- Expedited image resizing and uploading to **AWS S3** by using **Thumbnailator** to reduce **30%** thumbnail load time
- Constructed a scalable **RESTful Flask** app with **Swagger Codegen** and **SQLAlchemy** for reliable underwriting automation
- Implemented document uploading, sharing, editing, and labeling across multiple online platforms with **Angular**, **Spring Boot**, and **AWS S3** for thousands of underwriters from large insurance companies (e.g. RGA Insurance, AIA Group)

PROJECTS

Swag-Bot ★ *115* ⑂ *70*
</> *Node.js, Mongoose, MySQL* *Jul. 2018 – Jun. 2019*

- Established a point/coin system for **15** Discord servers with **500+** users by combining usages of both **MySQL** and **MongoDB**
- Created **77** commands capable of manipulating texts and images and visualizing data and statistics through third-party APIs
- Designed a **Music Task Scheduler** on top of Discord's audio stream in voice channels with YouTube API and **Node.js**
- Implemented an **Anti-Spam Filter** to prohibit members from spanning, cursing, and other inappropriate conducts in channels

Building Sensor Data Search Engine 📄 *ACM BuildSys'21 Paper*
</> *Angular, Flask, Node.js, MySQL, Pytorch, Docker, C++, RPC* *Jan. 2020 – Nov. 2021*

- Coupled **Angular** components with **Plotly** to display interactive visualizations for terabytes of IoT time-series data
- Engineered query evaluation with **Sliding Window Feature Extraction** and **Locality-Sensitive Hashing** of metadata
- Implemented an efficient time-series query matching pipeline that utilizes a heuristic **Dynamic Time Warping** algorithm to search across **20 Million** data points in less than **3 seconds**

Your Clear Way Mobile App ❧ *Non-profit Work*
</> *AWS AppSync/Amplify/Lambda/DynamoDB, Node.js, GraphQL, React Native, Expo* *Jan. 2021 – Mar. 2022*

- Led a team of **7** developers to build a mobile app that homeowners can use to show progress on making their homes more eco-friendly and claim badges based on the significance and number of upgrades they make
- Architected the point and badge system with **AWS Amplify** stack that utilizes various AWS technologies for GraphQL data layer, user authentication, serverless backend logic, and persistent data storage
- Worked as a cross-functional **Project Manager** with non-profit stakeholders and UX designers to scope out the requirements and timeline of the project

SKILLS

Programming & Markup Languages: Go, Python, Javascript/Typescript, Java, C/C++, Ruby, HTML/CSS, LaTeX
Frameworks & Libraries: Kafka, gRPC, AWS, Node.js, Django, Flask, Ruby on Rails, Pytorch, React, Angular
Databases: MySQL, PostgreSQL, MongoDB, DynamoDB, Firebase
Tools & Methodologies: Unix/Linux, Git, CI/CD, Agile Methodology, Design Patterns
Extracurriculars: Project Manager @ Triton Software Engineering, Member @ Tau Beta Pi Engineering Honor Society