Jing Xian Chai

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Education

University of Minnesota, Twin Cities — **Minneapolis, Minnesota, United States**

Bachelor of Science, Computer Science | GPA: 3.89/4 — *Sep 2021 - Dec 2023*

Coursework: Software Engineering, Algorithm and Data Structures, Machine Learning, Operating System, Cloud Computing

Experiences

Full-stack Engineer (Freelance) at Yiy Sing | Malaysia (remote) — *May-Aug 2023*

TypeScript, Next.js, TailwindCSS, tRPC, Prisma, Clerk, Supabase, AWS S3

- Migrated the e-commerce website and improved the user experience using modern web frameworks and technologies.
- Used Incremental Static Regeneration on the product listing pages, reducing the page load time by 65%.
- Integrated Stripe and webhooks for payment system, Supabase and AWS S3 for storing product information and images.

Full-stack Intern at OneCommons | San Francisco, CA (remote) — *May-Jul 2022*

JavaScript, Vue.js, Node.js, CSS, GraphQL, Jest, Cypress, Git

- Refactored GraphQL resolvers to optimize queries, reducing payload size by 50% and decreasing page load times by 30%.
- Utilized Agile method with Zenhub and Github to effectively manage daily tasks and weekly sprint planning.
- Improve user experience by integrating cookies, refining the state management system, and modifying UI components.
- Wrote unit and integration tests using Jest and Cypress, ensuring new and updated features work in production.

Technical Skills

Languages: TypeScript/JavaScript, Python, C/C++, Rust, Java, HTML/CSS, OCaml

Technologies: React, Next.js, Vue.js, TailwindCSS, Node.js, Express.js, GraphQL, Prisma, PostgreSQL, MySQL, Firebase, Redis, Docker, Apache Spark, Pytorch, Scikit-Learn, Pandas, NumPy, Matplotlib, Git/GitHub, AWS, GCS, macOS, Linux

Projects

Autoscaling Key-Value Store | Python, Scikit-Learn, Rust, Go, Docker | source — *Dec 2023*

- Researched key-value store solutions and optimized the key-value store, achieving a 200% increase in throughput.
- Built an autoscaling key-value store using machine learning and consistent hashing, achieving a 230% increase in throughput.
- Integrated failure recovery and prevention mechanisms, accomplishing 96% uptime and 0.005 failure rate.

Stock Market Forecasting | Python, Pytorch | source — *Dec 2023*

- Researched and implemented deep learning models (TCN, DeepAR, transformer) for competition, achieving a MAE of 5.616.

Parallel Label Propagation | C, Open MPI | source — *Dec 2023*

- Implemented a parallel label propagation algorithm for a multi-processor system, achieving a 50% decrease in run time.

Recommender System | Python, Apache Spark | source — *Apr 2023*

- Developed a collaborative filtering recommender system to predict the user and business ratings, achieving a RMSE of 0.76.

Metro-Transit Schedule Web App | TypeScript, Next.js, Chakra UI | source — *Mar 2022*

- Built a web application that shows the real-time metro transit schedule using Next.js, reducing the average wait time by 70%.
- Integrated a third-party API to fetch real-time schedules, transforming the data payload into type-safe data with TypeScript.
- Designed a responsive, user-friendly interface compatible with web and mobile platforms using Next.js and Chakra UI.

Minesweeper | TypeScript, React, Firebase, TailwindCSS, Express, Jest, Cypress | source — *Mar 2022*

- Improved page load speeds by 50% by implementing a cache system for frequently accessed leaderboard data.
- Reduced unnecessary requests and lowered costs by optimizing Firestore interactions and refactoring request logic.
- Improved security by integrating Firebase Authentication and securing the sessions with JWTs for reliable user data storage.