Chong Yun Long

Fullstack Software Engineer

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experience

GIC

Vice President – Investment Insights Group   May 2023 → now

- Developed internal systems to support Private Equity investments and analysis
- Implemented chat agents using vector stores and OpenAI APIs to enhance the efficiency of investment managers and extract insights from internal datasets.
- Reduced build times for a large JavaScript codebase by up to fourfold, from 20 minutes to 5 minutes.
- Optimized performance across various systems, achieving a latency reduction of up to 70% for backend APIs while ensuring better reliability through the offloading analytics to the browser using DuckDB-Wasm.
- Identified issues with network routing to overseas offices and optimized network bandwidth by implementing various compression techniques, resulting in a bandwidth reduction of over 30%.

Technologies: FastAPI | Python | React | TypeScript | Kubernetes

Goto Financial

Lead Software Engineer, Commerce Enablement – Moka POS   Jun 2021 → Apr 2023

- Managed a team of approximately 10 engineers, responsible for delivering features across multiple platforms (Backend, iOS, Android, and Web) for the flagship *Moka* product of Commerce Enablement.
- Led the development of the challenging (*Bundle Package*) project, which was successfully launched after a six-month development period.
- Spearheaded Apache Flink proof-of-concepts, creating reusable helm/code templates, setting up CI/CD, and automating alerting.
- Developed scripts and pipelines to automate Kafka Connect administrative tasks.
- Implemented new backend components in Spring Boot.
- Converted *Backoffice* Javascript codebase (>4000 files) to Typescript, improving codebase maintainability and reliability.
- Sped up end-to-end browser tests by up to $5\times$ by migrating from Selenium to Playwright.
- Introduced tools such as OpenAPI client generation, Redux Toolkit and Tailwind to reduce superfluous code, increase productivity and decrease bugs.

Technologies: Kubernetes | Spring Boot | Java | TypeScript | React | Python

Indeed

Senior Software Engineer, Careers   Apr 2019 → Jun 2021

- Spearheaded the architecture design of *Careers Explorer*. *Career Explorer* is the first large scale public facing node application at Indeed with over two million monthly views.
- Collaborated with a team of four engineers to build and launch *Careers Explorer* within three months, incorporating essential devops tasks such as production/error monitoring, CDN integration, and CI/CD pipelines.
- Coached engineers within and outside the team on API design, Typescript and React development, and backend best practices using Java Spring Boot.
- Migrated *Indeed Certifications*, an incubator product, from legacy Django templates to a modern stack on React and Spring Boot.
- Developed and maintained Presto/Trino-based ETL pipelines to track conversion and A/B testing metrics, enabling data-driven decision-making.

Technologies: Spring Boot | Java | TypeScript | Next.js | Python

nuTonomy/Motional

Senior Software Engineer, Data Platform   Sep 2018 → Apr 2019

Software Engineer, Data Platform   Jan 2017 → Sep 2018

- Full stack developer (.NET Core/React) for data platform/mapping team at *nuTonomy* which later became part of *Motional*, a joint venture between *Aptiv* and *Hyundai*.
- Built a large-scale docker-based compute orchestration infrastructure capable of dynamically scaling to support and coordinate hundreds of machines on AWS. This platform supported ML training pipelines, autonomous driving footage generation, large-scale safety simulations, and computation of critical metrics.
- Developed one-command deployment procedures for all backend microservices using AWS cloud services (Serverless, Terraform), resulting in higher uptime and reduced errors compared to SSH-based deployments.
- Set up and maintained a Hadoop cluster for processing large amounts of data generated from vehicle logs (4GB per vehicle per minute).
- Introduced and coached the software team on TypeScript/React, leading to the development of new CRUD services and incremental rewriting of old services.
- Pioneered various microservices using modern .NET Core on Linux, establishing coding standards for all backend microservices within the company.
- Implemented company-wide authentication/authorization using Auth0.
- Optimized frame rates of annotated maps by 300% through the implementation of a tiling-based garbage collector for three.js mesh.

Technologies: Terraform | Amazon Web Services (AWS) | .NET Core | TypeScript | React | Python

Government Technology Agency of Singapore (GovTech)

Product Engineer, Government Digital Services (GDS)   Jan 2015 → Jan 2017

- Developed Ruby on Rails/React.js web application for *Business Grant Portal (BGP)*, collaborating with various government agencies.
- Re-engineered *BGP*'s frontend/backend into a single-page application, significantly enhancing the user experience and interface.
- Established a unified architecture for *BGP*, reducing application complexity and improving code reusability, reliability, and performance.
- Mentored and coached the team, new hires, and vendors on the latest open-source technologies.
- Utilized agile software development methodologies and techniques (scrum, test-driven development, pair programming) to deliver high-quality products with significant business value.

Technologies: Ruby on Rails | Ruby | React | Javascript

education

National University of Singapore

1st Class Honours in Bachelor of Computing, Computer Science   Aug 2010 → June 2014

- Dissertation (Applied Cryptography) – *Efficient Key Aggregation for Cloud Storage*
- Awarded Dean's List for 3 semesters

publications

- Practical and Scalable Sharing of Encrypted Data in Cloud Storage with Key Aggregation   IH&MMSec 2016
- React Rails for Business Grants Portal   Medium