

MARTIN HSUEH

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SKILLS

- **Language:** Typescript, Python, Bash
- **Framework:** Node-Express, Node-Nest, React-Redux, Python-Flask
- **Database** MongoDB, PSQL, Redis, ElasticSearch
- **Other:** Git, AWS EC2/ECS/S3/Lambda/SQS/DynamoDB, Docker, Kubernetes, NX, Temporal

EXPERIENCE

Software Engineer - Internal Tools Tech Lead, Xealth

02/2022 - 05/2023

- Led a team of 5 engineers in managing the Xealth tooling ecosystem, including 2 mission-critical distributed systems and 5 full-stack applications written in TypeScript.
- Founded and built a distributed Content Management System (CMS), resulting in a 40% reduction in operational costs per customer request.
 - Built 30 unique/10 generic UI Extensions with 80% test coverage, used across 4 React applications.
 - Built a Node-Nest Server with 80% test coverage. It collects 200 events per second from 4 webhooks and acts as a proxy to deliver data from ElasticSearch and various APIs.
 - Engineered a scalable and reliable Temporal Worker to transform and write data to OpenSearch, maintaining 100% data integrity even during 2 dependency outages. Utilized Kubernetes to scale pods 3 times expected loads, successfully completing a critical 40-minute production migration.
 - Built the migration job, extracting 3TB of live data from ElasticSearch/S3 and transforming and writing it to rate-limited external APIs in batches.
 - Developed scripts for deploying App Config As Code to 3rd-party APIs to ensure a single source of truth.
- Studied ElasticSearch documentation to assist in designing the Elasticsearch index and search algorithm, achieving ~3ms latency, which far exceeded the 80ms constraint.
- Mentored junior engineers by providing code and design reviews based on industry best practices.
- Collaborated with PM and cross-functional engineers to spearhead technical architecture initiatives.

Software Engineer, Xealth

09/2019 - 02/2022

- Maintained the Automated Ordering system, which processed over 1M events per hour. It's a Dockerized state machine written in TypeScript integrated with AWS SQS and S3, driving 60% of revenue
- Contributed to the core Node/Express APIs, which serve the patient portal, doctor portal, data reporting, ordering, internal tools, and vendor callbacks.
- Developed an Event Notification service using AWS Lambdas, SQS, and S3, consistently delivering 300K events daily to subscribers
- Optimized a sluggish Lambda API with caching and concurrent request management, slashing response latency by 85% and increasing user productivity by over 30%.
- Identified inefficiencies in release tasks and enhanced developer efficiency by 50% via automation using a Bash script.
- Designed and implemented 5+ API integrations, handling 200K requests via SOAP or REST/OAuth protocols.
- Reduced developer configuration requirements by 25% through the application of Object-Oriented design principles, minimizing code duplication.
- Contributed 35% of the code for the Config Manager UI (project of 3 engineers), which was built on React-Redux and consisted of hundreds of components and containers.
- Resolved critical production bugs within tight deadlines, leveraging tools such as AWS Cloudwatch and Prometheus

Software Engineer Internship, Bespoke Metrics

01/2018 – 09/2018

- Enhanced 15+ JWT secured Python-Flask APIs with 95%+ code coverage
- Improved development efficiency by 50% by implementing a set of typed data validators

- Built the Bespoke framework, which consists of 8 generic APIs secured by OAuth2 and backed by PostgreSQL DB
- Trained full stack coops to build APIs for the flagship COMPASS application

Frontend Software Engineer Internship, TD Asset Management

04/2017 – 08/2017

- Enhanced 15+ React-Redux UI features for the Portfolio Management App.
- Improved user workflow by building the user notification component on top of the UI
- Executed new features by working directly with team VP and end users

PROJECTS

NBA Game Winner Prediction ML Model

2019

- Extracted 14 features from 20 years of historical NBA games.
- Built supervised learning models using algorithms such as regression, kNN, SVC, and linear discriminants with Python and its scikit-learn library
- Achieved 72% win/loss prediction accuracy with linear discriminant

EDUCATION

University of Waterloo, BAsC in Mechatronics Engineering

2015 - 2019