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, Healthcare, Applied ML

EXPERIENCE

Career Break **05/2023 - 09/2023**

- Fulfilled my dream of bikepacking around the island of Taiwan, jogged along the streneous 12-mile loop of the historic Seoul Wall, embarked on 5 river tracing expeditions, and indulged in all of the 8 cuisines of China.

Tech Lead - Internal Tools, Xealth **02/2022 - 05/2023**

- Led an agile team of 5 engineers in managing the Xealth tooling ecosystem, including 2 mission-critical distributed systems and 5 full-stack applications written in TypeScript.
- Influenced the engineering culture by mentoring junior engineers in industry best practices, conducting code reviews, and presenting and publishing technical blogs.
- Collaborated with the PM and cross-functional engineers to design systems iteratively
- Founded, architected and built a distributed Content Management System (CMS), resulting in a 40% reduction in operational costs per customer request.
  - Designed and 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 RESTful 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.
- Resolved critical production bugs within tight deadlines, leveraging tools such as AWS Cloudwatch and Prometheus

Full Stack 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 design of 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% by employing Object-Oriented design principles, minimizing code duplication.
- Collaborated with customers and vendors to resolve bugs and support design decisions.

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**