

## PROGRAMMING SKILLS

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LANGUAGES – Python, Typescript, Haskell, Golang, Rust, Lisp

TECH/FRAMEWORKS – Kubernetes, Docker, \*Nix, React/Redux, SQL, AWS

## EXPERIENCE

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### **Tulip Interfaces**

Boston Greater Area, MA

*Software Infrastructure Engineering Intern*

*Sept 2019 - Dec 2019*

- Worked on tooling for per-customer deployments: managing hundreds of kubernetes deployments, postgres databases and associated AWS resources. For example implemented auto deployment on our EU cluster, built tooling to manage expiration and deletion of deployments, and improved/fixed disaster recovery backups and rich-media asset migration.
- Implemented cold-storage for our elasticsearch logs and made them queryable by AWS Athena. In addition to permanent log storage, this allowed us to reduce the log retention period on our elasticsearch cluster and scale down it down.
- Determined that by purchasing a different reserved EC2 instance type, we could reduce our production clusters spend by 24% – currently  $\sim$  \$4000 USD a month. Discovered this by using Prometheus and Grafana to analyze our current production workload.

### **Setter**

Toronto, ON

*Backend Developer Intern*

*Jan 2019 - April 2019*

- Rewrote critical parts of the Node backend in Rust, e.g. realtime quote editor and payment endpoints.
- Helped implement CI/CD (Travis, Docker) for microservices and investigate moving from GCP to AWS.

### **Quantcast**

Singapore

*Software Engineering Intern*

*March 2017 - July 2017*

- Optimized performance of a real-time bidding configuration ETL (Extract, Transform, Load) pipeline. Cut down CPU time by  $\sim$  30%.
- Used indirection to reduce memory usage and number of sorts needed to shard black/whitelisted domains.

## ADDITIONAL COURSEWORK

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### **Real Analysis, Convexity and Optimization**

Harvard Extension School

Upper-division pure math course focused on optimization problems with convex sets, normed infinite-dimensional vector spaces, and convex functionals.

### **Learning From Data**

Caltech Telecourse

Machine Learning Course: [github.com/zhiyanfoo/caltech-machine-learning/](https://github.com/zhiyanfoo/caltech-machine-learning/)

Complete list of additional coursework done can be found at [zhiyanfoo.github.io/learning/](https://zhiyanfoo.github.io/learning/).

## PROJECTS

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**Zen:** An alternative to python's virtualenvwrapper. <https://github.com/zhiyanfoo/zen>

## EXTRACURRICULARS

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Haskell Club Founder. Soccer. Basketball. Dungeons and Dragons.

## EDUCATION

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### **University of Waterloo**

Waterloo, ON

*Joint Pure Math and Computer Science*

*August 2017 – Present*