

## PROGRAMMING SKILLS

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LANGUAGES – Golang, Python, Typescript, Haskell, Rust, C/C++

TECH/FRAMEWORKS – Kubernetes, Docker, Concourse, React/Redux, AWS, Cilium, Prometheus, Elasticsearch

## EXPERIENCE

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### Datadog

*Software Engineering Intern (Traffic Team)*

NYC, NY (Remote)

*Jan 2021 - April 2021*

- Worked on Datadog's cross-cluster service discovery platform.
- Built tools to stress and loadtest cilium (kubernetes cni plugin).
- Built tools to write and debug cilium network policies.

### Tulip Interfaces

*Software Infrastructure Engineering Intern*

Boston Greater Area, MA

*Sept 2019 - Dec 2019 and May 2020 - August 2020*

- Reworked deployment to use a distributed build process (via Concourse). Led to 50% reduction in deploy time for microservices (20m to 10m) and enabled multiple parallel builds.
- Built a new Go service that allowed modifications of our customer's Kubernetes ingress. This allowed customers to filter traffic to their sites.
- Permanently stored our elasticsearch logs in S3 and partitioned them to be queryable by AWS Athena.
- Standardized builds on Buildkit across all our services, away from default Docker and Rocker.
- Researched using vertical pod autoscaling to automate resource allocation for statefulsets.

### Setter

*Rust Developer Intern*

Toronto, ON

*Jan 2019 - April 2019*

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

### Quantcast

*Software Engineering Intern*

Singapore

*March 2017 - July 2017*

- Cut down the CPU time of a real-time bidding configuration ETL pipeline 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/)

## OPEN SOURCE AND PROJECTS

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**oplogtoredis**: Enabled TLS support for connecting to redis. [github.com/tulip/oplogtoredis/pull/26/files](https://github.com/tulip/oplogtoredis/pull/26/files)

**Zen**: An alternative to python's virtualenvwrapper. [github.com/zhiyanfoo/zen](https://github.com/zhiyanfoo/zen)

## EDUCATION

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### University of Waterloo

*Pure Math and Computer Science*

Waterloo, ON

*August 2017 – Present*