SIMON ZENG

Software Engineer

@ contact@simonzeng.com   📞 1 (613) 983-9079   🔗 simonzeng.com   🔗 s-zeng   in s-zeng1

EXPERIENCE

TQ Tezos :: Software Engineering Intern (Blockchain)

`Blockchain` `Haskell`   📅 Sep 2020 – Dec 2020   📍 New York, New York

- Authored Tezos smart contracts in a Haskell EDSL to automate proprietary applications for permissioned blockchains
- Converted large and fragmented Python-based Tezos Kubernetes deployment to idiomatic Dhall, greatly improving readability and maintainability
- Constructed peer-to-peer staking topology monitoring and visualization infrastructure with Python

Tesla :: Software Engineering Intern (Firmware Tooling)

`Haskell` `Python` `Java`   📅 Jan 2020 – Oct 2020   📍 Palo Alto, California

- Developed and maintained large Haskell code base responsible for automated firmware documentation, code, and signal generation
- Improved Haskell products' performance and runtimes by over 20% by identifying laziness-related space leaks and rewriting hot code paths
- Responsible for design and implementation of firmware verification infrastructure employed by entire organization
- Designed and developed robust firmware signal inspection architecture with Java and modern statically typed Python

University of Waterloo :: Teaching Assistant (Algebra)

`Pure Math` `Teaching`   📅 Sep 2019 – Dec 2019   📍 Waterloo, Ontario

- Tutored classes of over 1000 students in number theory and abstract algebra
- Prepared individual tutoring lesson plans to ameliorate understanding in advanced topics such as quadratic reciprocity or interactive theorem proving

Ericsson :: Software Engineering Intern (Performance)

`Clojure` `Python`   📅 May 2019 – Aug 2019   📍 Kanata, Ontario

- Developed pure functional Clojure metrics infrastructure to monitor complex JVM architectures, allowing for discovery of multiple performance issues
- Implemented a parser and interpreter for an internally designed performance-testing DSL

CENX :: Software Engineering Intern (Test Automation)

`Python` `Systems`   📅 Jul 2017 – Sep 2017   📍 Ottawa, Ontario

- Developed robust automated Python framework for load-testing web apps
- Created custom implementation of IETF RFC socket protocols to debug non-standard network stacks
- Discovered and provided patches for multiple security issues, including cryptography weaknesses, via automated fuzzing

inBay Technologies :: Software Engineering Intern (Full Stack)

`Ruby` `Rails` `Javascript`   📅 Jul 2016 – Aug 2016   📍 Kanata, Ontario

- Created internal use development tools backed by Ruby on Rails and Javascript to monitor and debug specialized production systems

PROJECTS

🔗 s-zeng/dhall-python

`Rust` `Python` `Dhall`

Python bindings for Dhall, a functional configuration language

🔗 s-zeng/board-to-latex

`Flask` `OCR` `Latex`

Turn pictures of math into latex

🔗 s-zeng/rag-shenanigann

`Python` `Torch` `MIDI`

Generate ragtime music with AI

OPEN SOURCE

🔗 dhall-lang/dhall-kubernetes

`Kubernetes` `Dhall`

3367b68 Remove declaration of deprecated python script

🔗 nvim-lua/telescope.nvim

`Lua` `Vim Script`

59ef37d Implement shortcut to dynamically use other telescopes

🔗 ujihisa/repl.vim

`Vim Script` `Racket`

4910aa7 Add support for Racket

MISC EXPERIENCE

Swim Instructor
Certified by Red Cross and Life Saving Society

Accordion Teacher
Offering private lessons

Camp Counsellor
For youth robotics camps

EDUCATION

Bachelor's degree, Computer Science

📅 2022   📍 University of Waterloo