

SIMON ZENG

Software Engineer

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s-zeng

in s-zeng1

EXPERIENCE

Tesla :: Software Engineering Intern (Firmware Tooling)

Haskell Firmware May 2021 – Aug 2021 Remote

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

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

- 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

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-shenanigans

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