

SIMON ZENG

Software Engineer

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in s-zeng1

s-zeng

EXPERIENCE

TQ Tezos :: Software Engineering Intern (Blockchain)

Blockchain

Haskell

Sep 2020 – Dec 2020

New York, New York

- Contributed to Python and Haskell blockchain products
- 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 – Aug 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%
- Responsible for design and implementation of core 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 domain specific language targeted at highly variable telecom network performance evaluation environments, greatly reducing workload for performance team
- Contributed to Python performance testing applications

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 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

SUMMARY

- Professional experience in functional programming (**Haskell, OCaml, Clojure**)
- Competent core development skills (**Python, Java, Ruby, Javascript**)
- Avid user and contributor of free, libre, and open source software
- Strong background in mathematics

PROJECTS

s-zeng/board-to-latex

Flask

OCR

LaTeX

Turn pictures of math into latex source

s-zeng/rag-shenanigans

Python

Torch

MIDI

AI-generated ragtime music on demand

OPEN SOURCE CONTRIBUTIONS

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 scheme

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 of Computer Science

2022

University of Waterloo