SIMON ZENG

Software Engineer

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EXPERIENCE

Tesla Inc :: Software Engineering Intern (Firmware Tooling)

`Haskell` `Python` `Java`

📅 January 2020 – April 2020   📍 Palo Alto, California

- Developed and maintained large Haskell code base responsible for automated firmware documentation and code generation
- Instrumented and completed an extensive porting undertaking from legacy Haskell codebases to modern statically typed Python
- Responsible for design and implementation of core version control verification infrastructure employed by entire firmware organization

Ericsson :: Software Engineering Intern (Performance)

`Clojure` `Python`

📅 May 2019 – August 2019   📍 Kanata, Ontario

- Developed pure functional Clojure metrics infrastructure to monitor complex JVM architectures
- Implemented a parser and interpreter in Python for an internally designed domain specific language specifically tailored for highly variable performance evaluation environments

CENX Inc :: Software Engineering Intern (Test Automation)

`Python` `Networking` `Security`

📅 July 2017 – September 2017   📍 Ottawa, Ontario

- Developed robust automated UI-testing Python framework for load-testing web applications
- 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` `HTML/CSS`

📅 July 2016 – August 2016   📍 Kanata, Ontario

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

University of Waterloo :: Algebra Teaching Assistant

`Number Theory` `Abstract Algebra` `Formal Logic`

📅 September 2019 – December 2019   📍 Waterloo, Ontario

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

SUMMARY

- Professional experience in functional programming (**Haskell**, **Clojure**)
- Competent core development skills (**Python**, **Java**, **Ruby**, **Javascript**)
- Strong background in mathematics and formal methods

PROJECTS

Board to Latex

github.com/s-zeng/board-to-latex

React web app that transcribes photos of chalkboards and whiteboards to latex source, with OCR handled by a Python and Flask backend

Ragtime Generator

github.com/s-zeng/rag-shenanigann

A suite of Python scripts that fully automates the entire pipeline of AI-based ragtime generation, covering everything from automatically sourcing its own training data to outputting ragtime MIDI files on demand

MISC EXPERIENCE

Swim Instructor
Certified by Red Cross and Life Saving Society

Accordion Teacher
Offering private lessons

Camp Counsellor
For summer youth robotics camps

EDUCATION

Honours Computer Science, Co-op

University of Waterloo

📅 September 2018 – May 2023 (expected)

2nd Year | Major Average: 88.5%