

# SIMON ZENG

## Software Engineer

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simonzeng.com

in s-zeng1

s-zeng

## 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](https://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](https://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

### Bachelor's of Computer Science

University of Waterloo

September 2018 – May 2023 (expected)

2<sup>nd</sup> Year | Major Average: 88.5%