# **SIMON ZENG**

#### **Software Engineer**

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% simonzeng.com

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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

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

- 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 Al-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)

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