

# Rhys Rustad-Elliott

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## Professional Experience

### Okta

Toronto, Ontario

Software Engineering Intern, Engineering Productivity Team

May 2018 – July 2018

- Implemented a horizontally-scalable system to analyze AWS costs using Redis-based distributed locking, identifying thousands of dollars in potential savings
- Created a Java/Spring Boot-based microservice and associated frontend to gather and display a variety of metrics on Okta's in-house CI system relevant to engineers and managers
- Wrote a detailed deployment guide for a sparsely documented internal credential management system
- **Technologies Used:** Java EE, Spring Framework, MySQL, Redis, Maven, Hibernate, JavaScript, React

### Hootsuite

Vancouver, British Columbia

Software Engineering Intern, Publisher Team

July 2016 – August 2016

- Reworked Hootsuite's Chrome extension to automatically detect HTTP security headers blocking its use
- Created a UI test for Hootsuite's Bulk Composer tool using an in-house Selenium based testing framework
- Participated in iterative development on several features for the Hootsuite Publisher
- **Technologies Used:** JavaScript, React, HTML/CSS, PHP, Selenium, Chrome Extension APIs

## Projects

[More at github.com/GunshipPenguin](https://github.com/GunshipPenguin)

### Shallow Blue, a strong chess engine written in C++11

- Generates roughly 12 million chess moves per second using a fast bitboard-based move generator
- Accurately assesses black/white advantage for a given board using a sophisticated evaluation function
- Implements a highly tuned principal variation search algorithm making use of several heuristics
- Integrates seamlessly with any UCI compliant chess GUI

### NEScafé, an accurate Nintendo Entertainment System emulator written in C#

- Supports the majority of published NES games through emulation of vendor-specific cartridge hardware
- Emulates the NES's MOS 6502 CPU, graphics hardware and memory-mapped I/O
- Reproduces hardware bugs present in the original NES for accurate emulation

### lib8080, a well tested emulation library for the Intel 8080 CPU written in C

- Enables easy emulation of the Intel 8080 CPU in external projects
- Emulates all documented and undocumented instructions in the Intel 8080's instruction set perfectly
- Runs Microsoft's Altair BASIC 3.2 (1975) when integrated with an emulated teletype machine

## Education

### University of Toronto

2016 – 2020

Candidate, Hon. Bachelor of Science, Specialist Program in Computer Science

- Dean's List (2016)
- Entrance scholarship recipient

## Achievements

- LPIC-1: Linux Administrator Certification
- University of Toronto ACM-ICPC Programming Contest team member, 2016 & 2017
- Winner, Best Fintech Hack, PennApps XVI
- Perfect score: 2014 Junior Canadian Computing Competition