

# Eric Secules

Computer Engineering

## TECHNICAL SKILLS

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### Technologies

- Kubernetes / Docker
- Distributed Systems
- AWS
- VMware
- OpenCV
- REST

### Languages

- C / C++, Python
- Java
- Bash
- SQL
- HTML / JavaScript

### Computer Skills

- Linux / UNIX
- Networking (TCP/IP)
- Mercurial / Git / Subversion
- JIRA
- Matlab

## ACADEMIC & CO-OP STATUS

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### Academic Program

- Software Option; 6 of 8 academic terms completed
- Anticipated date of graduation: May, 2017

### Co-op Status

- Completed 3/5 work terms; available for 4 or 8 months beginning January, 2014

## TECHNICAL WORK EXPERIENCE

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### Coho Data

May, 2015 – December, 2015

#### Software Developer Co-Op / Build Sheriff

- Designed a push message protocol to send messages and requests to the product. This improved the customer experience by increasing frequency of UI updates and decreasing the amount of time interacting with support.
- Contributed feedback to the open source projects Kubernetes and InfluxDB regarding bugs and new features.
- Deployed the current customer data collection system on a Kubernetes cluster for increased reliability.
- Redesigned the test infrastructure for the data collection back-end to be nearly identical to production to make rolling out new features as smooth as possible.
- Rewrote product code for said system to be easily scalable and adaptable to future demands.
- Created a custom web dashboard to make the collected data and push messages easily accessible.
- Created a mock version of Amazon S3's core features and wrapped it inside a REST API.
- On my 4 week post as Build Sheriff I triaged buildbot failures on important branches and assigned JIRA issues to the team best suited to solve them.

### Netronome

May, 2014 – August, 2014

#### Silicon Validation Co-Op

- Managed testing of 30+ parts over six verification platforms. Set up testing servers and ran tests.
- Designed and implemented application to make SHMOO plots from raw data gathered by querying the test results database. Used this application to help generate a report for manufacturer.
- Designed and implemented a script to control network attached power strips in the lab. The script allowed Netronome to save on electricity by turning off the verification platforms when they are not needed.
- Documented the process for testing chips and plotting the results on the company wiki so that others could easily pick up where I left off at the end of my work term.

### Netronome

May, 2013 – August, 2013

#### Design Verification Intern

- Wrote tests in Netronome NFP microcode using Emacs for their new flagship chip in development stage which caught 8 new bugs that are now resolved.
- Some of these tests are in a part of a program which checks whether each new change to logic meets the specifications outlined in the documentation.
- Simulated the chip using Cadence Verilog Simulator, analyzed and debugged test output with Cadence Simvision.
- Taught another intern and her mentor what I previously learned about microcode test writing through in person tutorials and a wiki page so we could collaborate in writing tests.

## TECHNICAL PROJECTS

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### UBC Course Scheduler

July, 2015 – Ongoing

- Wrote back end server and architected a UBC course scheduling web app which aims to make schedule planning easier for students. Manual scheduling is done, and automatic scheduling by genetic algorithm is in progress.

## Personal Web Page

July, 2015 – Ongoing

- Created my own webpage hosted on GitHub Pages to showcase my major projects using a single page design with HTML5. I also customized the CSS to suit the design I had in mind.

## Open Source Contribution – SweetAlert

September, 2014 – December 2014

- Contributed, in a group of three, to the open source JavaScript project, SweetAlert, by adding an adaptable scroll box and an entire test suite. My group's efforts were rewarded with an A+.

## C Hacking

December, 2014 – December 2015

- Wrote my own GUI in C for a NIOS II CPU which could display pictures as well as read and write text. This design won first prize for the final lab.
- Wrote my own webserver using C socket programming. This server responds to GET requests
- Created a graph library in C++ that implements Dijkstra's algorithm for finding the shortest path between nodes.

## Augmented Reality Tic-Tac-Toe

January, 2013 – May 2015

- Wrote image detection code in Python using OpenCV for a group project where a computer plays tic-tac-toe against a human using a camera. The image was received on a DE2 board and processed on a Raspberry Pi
- Wrote the image transfer code for the above project in C so that communication between the boards could be as fast as possible (26 kbps).
- Diagnosed and debugged problems across VHDL, C and Python in order to transfer images between an analogue camera through a DE2 board and into a JPG file on a raspberry pi.

## Magnet Following Robot

September, 2013 – May 2014

- Designed and built a magnetic field following robot in a group of six students. This robot was very accurate and followed the magnetic field smoothly.
- Designed and wrote C to control steering based on sensor readings as well as react to any commands sent via magnet waves.

## Microcontrollers

September, 2013 – May 2014

- Used an Altera DE2 Board and VHDL to design a pong game to be played on a VGA monitor.
- Wrote assembly programs for the 8052 and 68k chips such as an alarm clock which played music in two note polyphony over a piezoelectric buzzer.

## FIRST Robotics Competition

October, 2010 – June, 2012

- Designed and built a large robot in 6 weeks to compete in games with other robots, like basketball and soccer. One robot placed second in a regional competition and won all local competitions.
- Lead the design of a new modular drive train so that it could be switched out easily in the case of failure in the field. However the initial drive trains were built to such a high standard that they never needed replacement.

## OTHER WORK EXPERIENCE

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### Eric Secules Photography

June, 2011 – August, 2013

#### Owner / Photographer

- Photographed events and portraits for a wide variety of customers, like my school, and people in the community.
- Worked with a wholesale supplier to provide my customers with a first class experience regardless of the complexity of their request.
- Catered to the needs of each customer individually to make sure their specific needs are satisfied

## EDUCATION

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### University of British Columbia

September, 2012 – May, 2017

*BASC - Computer Engineering, Software Option*

## AWARDS

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UBC Dean's Honour List

2014

UBC Dean's Honour List

2015

## PROFESSIONAL AFFILIATIONS

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### IEEE

APEGBC Member Advantage Program for Students (MAPS)