

# Lief Swanson

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## Education

### Simon Fraser University

Undergraduate Burnaby, BC CAN  
Dual BSc Degrees  
CGPA = 3.32 Graduated 2019 Feb

#### Software Systems

Involved both the practice and theory of computer science, with a focus on practical software development.

#### Interactive Arts And Technology

Focused on gathering and acting upon user requirements. Involved graphic design, UI, animation, sound design, material design, film, UX, psychology, sociology, and more.

#### Undergrad Researcher

##### Cognitive Science

**Lab Volunteer** 2016 Sept - 2018 Dec  
Assisted in experiments about long-term learning and task mastery. Investigated the relation between expertise and the time taken to assess and act on task related information.

#### USRA Grant (\$5,500 CAD) 2017 May - Aug

Built the mathematical ground work for and wrote a prototype of a tool which dynamically creates keyboard layouts optimized to reduce typos in gesture typing; based on user vocabulary.

## Strengths

My knowledge doesn't end with my schooling; I have a knack for taking disparate fields of study and seeing how knowledge from one applies to problems in another. I also learn very quickly from example and through collaboration on a task.

## Skills

Apps	OSes	Languages	approx LoC
Bash & Fish	Arch Linux	Java	100k
Git	Ubuntu	Python	50k
Make & Ant	Windows	C & C++	25k
Inkscape	Android	C#	20k
Gimp		TypeScript	15k
		Haskell	10k
		Golang	10k
		Kotlin	5k
		Matlab	5k
		SQL	3k

## Work and Internship

### Simon Fraser University

Teaching Assistant Surrey, BC CAN  
2018 Jan - Mar

- Taught and marked as the only TA for 90 students in a 2nd year course about OOP using Java and Spring.
- Wrote my own marking automation, improving marking speed dramatically. Used the saved time to give deep personalized feedback on student code.

### Doctors of BC

Junior Support Specialist Vancouver, BC CAN  
2013 May - Sept

- Managed atypical and sporadic problems caused by temporary displacement of 30 employees.
- Designed step-by-step guides for coworkers, cutting down the number of trivial support tickets.

### Whittington IT

Consultant Brisbane, QLD AUS  
2012 Feb - Sept

- Managed the needs of over 40 doctors' offices, each with different EMR setups and server configurations.
- Managed all business affairs and customer relations for 4 weeks while employer was on sick leave.

## Personal & School Projects

### Compiler & Optimizer

18,000 lines of Java

- Implemented First class functions, arrays, rationals, strings, chars, ints, floats, and bools with type casting.
- Implemented Peephole, basic block reorganization & pruning, and static string deduplication optimizations.
- Developed my own multi-processed feature testing harness. Saved more time than I could estimate.

### Portfolio Website

8,000 lines of Vue.js

- Written and designed from scratch to teach myself single page web app dev. [liefswanson.github.io](https://liefswanson.github.io)

### Project Euler

3,000 lines of Haskell

- Solved and optimized the first 74 questions... so far.
- Covered many computer science and math ideas. For more details look at the problem set. [projecteuler.net](https://projecteuler.net)

### Sudoku Solver

1,000 lines of Kotlin

- Uses threadpools, deduction, and DFS to solve sudokus of any size... or prove them unsolvable.