Lief Swanson
liefswanson.github.io

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About Me

I am a software engineer and interaction designer with a strong drive for learning. I find working closely with team members very rewarding because I get to learn from, and hopefully teach, those around me while building meaningful relationships.

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.

Skills

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

Work and Internship

Simon Fraser University

Teaching Assistant   Surrey, BC CAN
2018 Jan - Mar

- Was the only TA for 90 students in a second 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

- First class functions, arrays, rationals, strings, chars, ints, floats, and bools. With type casting hierarchy.
- 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 development. www.lief.info

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

Sudoku Solver   1,000 lines of Kotlin

- Uses threadpools, deduction, and DFS to solve any standard sudoku... or prove it unsolvable.