

Rudi Chen

Student software developer with 8 years of experience

CONTACT

RUDI.CHEN@UWATERLOO.CA

LINKS

Website : digitalfreepen.com

Github: github.com/rudi-c

LinkedIn: ca.linkedin.com/in/rudichen

Quora: quora.com/Rudi-Chen

EDUCATION

UNIVERSITY OF WATERLOO

BACHELOR IN COMPUTER SCIENCE

Co-OPERATIVE PROGRAM

September 2012 to April 2017

(expected)

Dean's List (All Semesters)

Avg: 93%

SKILLS

PROGRAMMING

Very Proficient:

C# • C++ • C++11 • Python

Proficient:

Java • F# • Scala • C • Objective-C

Scheme/Racket • Swift

Capable:

Bash • Javascript • PHP • Ruby

Visual Basic • Elm • R

TECHNOLOGIES

Very proficient:

Git • Sublime • Vim • WPF • XNA

Windows Store • Windows Phone

Proficient:

iOS • Play Framework • DirectX

SVN • Jekyll • \LaTeX • Photoshop

Capable:

C++ AMP • CUDA • WebGL • Weka

EXPERIENCE

DROPBOX | SOFTWARE ENGINEERING INTERN

August 2014 - December 2014

- Worked on the Carousel iOS app using a mixed Objective-C/C++ cross-platform development approach.
- Shipped Carousel for iPad, made progressive high-resolution thumbnail fetching, improved grid layout to reduce whitespace.
- Made a complex refactor of a major part of the thumbnail layout engine.
- Took the initiative to write the first Swift code.

SIDE EFFECTS SOFTWARE | 3D SOFTWARE DEVELOPER INTERN

May 2013 - Aug 2013

- Praised for outstanding agility in carrying out diverse tasks and navigating 10 million+ lines C++ codebase.
- Implemented a framework that uses the Leap Motion Controller for 3D input as a project of my own initiative.
- Designed a content-aware selection-zoom algorithm to navigate 3D scenes, an update manager for digital assets, and a framework to gather telemetry data and crash logs, and other requested features.

MICROSOFT STUDENT PARTNER

September 2012 - present

- Main organizer for the Wowzapp 2012 Hackathon, designed and presented app development tutorials.

RESEARCH

HUMAN-COMPUTER INTERACTION | RESEARCH ASSISTANT

May 2014 - August 2014 | University of Waterloo

- Wrote applications for a 5m touchscreen, studying localized crowdsourcing.

COMPUTATIONAL PHOTOGRAPHY | RESEARCH ASSISTANT

Jan 2014 - April 2014 | University of Waterloo

- Used machine learning to create efficient heuristics for autofocus with 98.5% success rate.
- With minimal supervision, read papers, wrote code (Python scripts), performed experiments and wrote the entire paper.

"It was not an overstatement to say that Rudi's progress was impressive even when compared to the Master's students I have supervised." - Professor Peter Van Beek

COSMOLOGY | RESEARCH ASSISTANT

May 2011 - August 2012 | McGill University

- Introduced, researched and implemented a solution for finding straight lines in extremely noisy images in C.
- Optimized sections of the program with a speedup factor of 30 and increased workflow efficiency.

COURSEWORK

MATHEMATICS

Combinatorics (Advanced Level)
Statistics (Advanced Level)
Data Visualization
Chaos & Fractals

COMPUTER SCIENCE

Functional Programming (Adv. Level)
Algorithms & Data Structures
Numerical Computation
Operating Systems

LANGUAGES

Fluent English
Fluent French
Some verbal Mandarin

HOBBIES

Pen Spinning (I've been on TV)
Fractal rendering
Skiing
Go (board game)

PERSONAL PROJECTS

SKINWI.SE | 2014

Highly optimized fuzzy search (hybrid of a trie and Darneau-Levenshtein with a lot of heuristics) and auto-completion engine in Scala/Play Framework.

INKING THE NORTH | 2014

App for note-taking with a stylus, with advanced features such as generating beautiful graphs from vague sketches, handwriting autocorrection, easy to use gestures for text insertion and deletion. Made at Hack The North.

SMART RESIZE | 2013

Won first place at an international hackathon in Sweden beating veterans with 20 years of experience. Presented at Nokia World '13, Abu Dhabi to journalists worldwide. Mentioned by Nokia CEO during Mobile World Congress '14 keynote. 100,000+ downloads on Windows Phone Store.

FRACTAL PHOTOGRAPHER 3D | 2013

Real-time GPU raytracer for 3D fractals with hand gesture navigation using then just-released Leap Motion Controller.

FRACTAL PHOTOGRAPHER | 2013

Highly polished and optimized multi-threaded fractal renderer. Featured app on Windows Store (May '13), "Leap Motion with Windows" video, Techradar's "25 best Windows 8 apps available today", Intel App Innovation Contest. 50,000+ downloads on Windows Store.

INFLUENCE GAME | 2012

Independent artificial neural network research project with a virtual environment for AI teams to compete in and a variation of Swiss tournament which led to significant improvements to the AI, all documented on my website.

HARMONICS TD | 2009

Music-themed tower defense game that won first place in HBGames.org's indie game contest. Designed all of concept, levels, graphics, architecture and code.

AWARDS

- 2014 2nd place in CS 241 compiler optimization contest, using graduate-level optimization techniques
- 2014 NSERC research award, 4500\$
- 2014 Winston and Diana Cherry Award for highest grade in a 4th year statistics class (that I took while in 2nd year)
- 2013 Mathematics Senate Scholarship for Academic Excellence, 3000\$
- 2012 Senior Eastern Canada Winner at the CCC (Canadian Computing Competition)