Rudi Chen

Software developer with 8 years of experience and highly capable self-learner.

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Experience

Research Assistant, University of Waterloo [Python, C++, R | Weka, Git] Sept. '13 – present

- Independently turned an idea into a 40% faster autofocusing algorithm with 98% success rate.
- Used machine learning to create efficient heuristics for autofocusing with 95% correct classification.
- Mined thousands of photos on Flickr for EXIF data to tally statistics.

3D Software Developer, Side Effects Software [C++, Python | Django, SVN, Agile/Scrum] May '13 – Aug. '13

- Praised for outstanding agility in carrying out diverse tasks and navigating 10 million+ lines codebase.
- Implemented a framework to use 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, a framework to gather telemetry data and crash logs, and other requested features.

Microsoft Student Partner, University of Waterloo Sept. '12 – present

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

Research Assistant, McGill University [C, Linux] May '11 – Aug. '12

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

Personal Projects

- **Smart Resize, Windows Phone** (2013, C#, C++ | NEON SIMD). 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. 92,000+ downloads.
- **Fractal Photographer 3D** (2013, C++, C# | DirectX, WPF). Real-time GPU raytracer for 3D fractals with hand gesture navigation using then just-released Leap Motion Controller.
- **Music & Graphics** (2013, C++ AMP, DirectX). Music visualizer with glow and reflection effects, beat detection and song segmentation algorithm, real-time fluid simulator with GPU acceleration.
- **Fractal Photographer, Windows 8** (2012, C#, XAML). Highly optimized fractal renderer with extensive multi-threading and distinctive UX features such as pinch-zoom-rotate. Featured app on Windows Store (May '13), "Leap Motion with Windows" and "Microsoft Platform Video Spring 2013" videos, Techradar's "25 best Windows 8 apps available today", Intel App Innovation Contest. 47,000+ downloads
- **Influence Game** (2012, C++, Scheme). 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 in my blog.
- **Harmonics TD** (2009, C# | XNA). Music-themed tower defense game that won first place in HBGames.org's indie game contest. Designed all of concept, levels, graphics, and architecture.
- **Technologies used in other projects** (2006-2014). JavaScript/WebGL, Java, Processing, Visual Basic, F#, PHP, Ruby, CUDA, WinForms, Photoshop, LaTeX

Education & Awards

University of Waterloo, Waterloo {94% average; 4.0 GPA} Sept. '12 – Dec. '16
Bachelor of Computer Science, Co-operative Program with advanced classes, 3x Dean's Honours List

- (2013) NSERC (Natural Sciences and Engineering Research Council of Canada) research award, 4500$
- (2013) Mathematics Senate Scholarship for Academic Excellence, 3000$
- (2013) Winston and Diana Cherry Award (for best performance in a 4th year statistics class)
- (2012) Senior Eastern Canada winner at CCC (Canadian Computing Competition)