**Technical Skills**

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|  | **Artificial Intelligence:** Reinforcement Learning, Machine Learning, Game Theory, Probabilistic models.  (Ubisoft, ChessAI, Gesture Recognition, Stanford) |
|  | **Mobile:** iOS, Windows8, Touch (gestures), embedded Web Applications  (Microsoft, Gesture Recognition) |
|  | **Graphics:** 3D rendering, parallel processing, image filtering/transformations  (Sunnybrook Hospital, Chess AI) |
|  | **Strong software engineering background:**  **Languages:** C/C++/C#, Java, iOS, Objective-C, CSS, HTML, Javascript, OpenGL/CL, GLSL  **Tools:** Linux, OS X, Windows, Git, Visual Studio**,** XCode, Perforce, |

**Work Experience**

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|  | **Microsoft**  **Software Design Engineer** Redmond, WA  Sept 2012 - Dec 2012 | * Created applications for iOS and windows8 on Microsoft CRM team * Constructed a communication and authentication framework between web-based code and native code. * Assumed responsibility as sole developer and creator of the applications as well as implementing UX, testing and development. | *iOS, Windows8, WinJS, LiveID,*  *Objective-C, Javascript, CSS, HTML, oAuth,* |  |
| **Ubisoft**  **Game Programmer** Toronto, ON  Jan 2012 - May 2012 | * Extended the current bayesian hierarchical state machine to respond to environmental factors. * Worked inter-departmentally to create a perfect look and feel as well as a technically strong solution. * Owned the project from conception to a polished product. | *C++, AI,*  *Cross-team communication,*  *End-end develop.* |
| **Sunnybrook Hospital**  **Jr. Software Engineer** Toronto, ON,  Sept 2010 - Sept 2011 | * Worked at startup company called Colibri Technology associated with Sunnybrook Hospital. * Created an application from scratch in C# to acquire / display frames of data from a 3D ICE catheter in real time. * Used OpenGL for image rendering and OpenCL/GLSL for image processing and manipulation. | *C++, MFC, C#, C, OpenGL, OpenCL, GLSL, FPGA*  *Real time programming* |
| **University of Waterloo FSAE Team**  **Machinist/Business Liaison** Waterloo, ON  Jan 2010 – May 2010 | * The University of Waterloo FSAE team designs a scaled down version of a F1 car. * Created and refined mechanical components. * Organized and presented business proposals for RIM, Spaenaur, Marken Performance, and RapidGear. * Served as a liaison between mechanical and business teams. | *Prepared business presentations,*  *financial reports, Communication* |

**Personal Projects**

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|  | **Chess AI**  Feb 2012 – May 2012 | * Investigated reinforcement learning and genetic algorithms to train a linear regression function by having the AI play itself. * Created a 3D application to interface with human players. * The AI went 6-0 against volunteers at a design symposium. * Increased efficiency by using algorithms to prune the (minimax/decision) search tree and utilizing multithreading. | *OpenGL, C++, Objective-C, OS X, Genetic Algorithms, Reinforcement Learning* |  |
| **Sudoku AI**  Jan 2012 – Feb 2012 | * Utilized constrained and backtracking search algorithms to solve an arbitrary Sudoku puzzle. | *C++, AI,*  *Pruned Searching* |
| **Java Games**  Jan 2010 – Sept 2011 | * Created several games in Java including minesweeper, tic tac toe, checkers, asteroids | *Java, Java2D* |
| **Touch Gesture Recognition**  Oct 2012 - Current | * Investigating different methods of mapping touch gestures to a list of ‘known’ gestures. * Examining shape matching as well as training (neural network) algorithms. | *C++, Objective-C, OpenCV, iOS* |

**Education**

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|  | **University of Waterloo**  Sept 2009 – May 2014 (expected) | * **Major**: Mechatronics Engineering * **Minors**: Pure Math, Computer Science * **GPA**: ~90 ( / 100) * Data structures and Algorithms, Real Time Operating Systems, Microprocessors and Interfacing |  |
|  | **Stanford Univ. (online)**  Aug 2012 – Feb 2012 | * Intro to Machine Learning, Probabilistic Graphical Models, Compilers (completed) * Game Theory (in progress) |  |

**Awards/Activities**

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| **University of Waterloo**  Sept 2009 – May 2014 (expected) | * Dean’s Honour List (2010-2012) * President’s Scholarship of Distinction (2009) * 3rd Place WEC Jr. Design Competition (2009) * First Year Mentor and Orientation Week Leader (2010) |  |
| **Extracurricular** | * NSERC Research Grant, Colibri Technology (2010) * I enjoy playing soccer, tennis, as well as watching movies |  |

**Motivation/Drives**

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| **Continuous Improvement** | * This applies to life, education, and work. There is always something that can be improved, some flaw, some room for improvement. My goal is to always be working to better myself, and my work. * There is always more to be done. It is just a matter of identifying, prioritizing, and achieving. |  |
| **Ambition** | * Better to aim for the best, than to be content with mediocre. * Setting lofty goals forces us to work harder, subconsciously and consciously. |  |
| **Timely Results** | * Ultimately, the most important part of any job is achieving results in a timely manner. * I pride myself on my work ethic and my ability to learn quickly. |  |
| **End to end Results** | * A solution should aim not to just solve a task at hand, but to solve the unknown tasks of the future. * A solution should be extensible, flexible, and adaptable. |  |