**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 transformations  (Sunnybrook Hospital, Chess AI) |
|  | **Strong software engineering background through Personal Projects, Work Experience, and Classroom Learning:**  C/C++/C#, Java, Linux, OS X, Windows, Git, Visual Studio**,** OpenGL/CL, GLSL, Obj-C, iOS, Javascript, CSS |

**Work Experience**

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|  | **Microsoft**  **Software Design Engineer** Redmond, WA  Sept 2012 - Dec 2012 | Worked on Microsoft CRM team, creating new applications for iOS and windows8.  Constructed a communication and authentication framework between web-based and native functionality.  Assumed responsibility as owner of the applications as sole developer, creator, and 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* |
| **Waterloo University FSAE Team**  **Machinist/Business Liaison** Waterloo, ON  Jan 2010 – May 2010 | The University of Waterloo FSAE team is designs a scaled down version of a F1 car.  I created and refined mechanical components.  Created and gave 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 showcase results.  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 algorithms. | *C++, Objective-C, OpenCV, iOS* |

**Education**

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| --- | --- | --- | --- | --- | --- |
|  | **School**: University of Waterloo | **Major**: Mechatronics Engineering | | **Minors**: Computer Science, Pure Math |  |
| **Graduation** **Date**: May 2014 | **GPA**: ~90 ( out of 100) | |  |
| **Additional** **Coursework** | |  |  |
| **Stanford**: Intro to Machine Learning, Probabilistic Graphical Models, Compilers, Game Theory (all taken online) | | | |
| **Other :** Intro to Artificial Intelligence (audited at University of Waterloo),  Intro to Business (taken while in Grade 12 at Ivey Business School, UWO) | | | |

**Interests/Awards**

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|  | **University of Waterloo** |
| 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) |

**Motivation and Drives** ()

Continuous Improvement