Daniel Johnson

M.A.Sc., B.A.Sc.
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Goal: To work with a team solving interesting software problems with real-world applications. I'm not interested in making software for its own sake, but get excited seeing the impact that software can make solving real problems for real people every day.

Skills

- **Development:** Objective-C/Cocoa, C/C++, Python, iOS, HTML, Javascript, Git
- **Application Design:** Designed, built, and released applications for iOS, Mac, Windows, and the web: both in the workplace and on my own time.
- **Algorithm Development:** Created and refined algorithms for processing digital signals for many different applications.
- **Modeling:** 2-D and 3-D Dynamics and simulation of multibody systems, strong understanding of 3-D motion, rotation transforms, and integrating system equations.
- **Control Systems:** Practical experience with the control of biomechanical simulations. Taken courses in Adaptive, Multivariate, and Optimal control techniques.
- **Learning:** Love to learn new things and explore new ideas. Quick to pick up new skills and technologies as required

Work Experience

Apple Inc. Cupertino, CA
Software Engineering Intern - iOS Location Software *Jan-Apr 2010 and Sep-Dec 2010*

- Designed and implemented a testing framework for location algorithms on iPhones and iPads in the form of an iOS application, Mac application, and accompanying server-side components using Objective-C, C, C++, and Python.
- Developed an improved location algorithm using Kalman Filters for determining an iOS device's location during positioning.
- Presented the completed application to senior management after being selected as the best intern project of the term.

University of Waterloo (Vision and Image Processing Lab) Waterloo, ON
Research Assistant - `vip.uwaterloo.ca/website-package` *May-Aug 2011*

- Developed computer vision algorithms for processing SAR imagery of sea-ice in the Canadian North.
- Implemented algorithms within existing image processing software in Visual C++.
- Supervised and assisted a co-op student building a website for the lab using Drupal resulting in a package for building research group websites that was released as open-source
- Administered Apache, PHP, MySQL web server for hosting the lab website

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Trimble Navigation Christchurch, NZ
GPS Software Tester *May-Aug 2009*

- Developed and performed experiments on software keyboards for mobile devices using C#.
- Developed embedded micro-controller code for RF chamber test rig for handheld GPS devices.
- Tested hand held GPS devices for accuracy and interface usability.

CREZ Basketball Waterloo, ON
Software developer *Jan-Apr 2007 and Sep-Dec 2007*

- Developed statistics software for basketball coaches in Visual Basic .NET and C#
- Implemented client-side code for livestreaming basketball statistics to a web service.
- Packaged and released software to clients using InstallShield.
- Provided technical support through direct interaction with customers and written documentation

Education

University of Waterloo Waterloo, ON
Masters of Applied Science - Systems Design Engineering *2012-2015*

- Created a comprehensive golfer swing model using MapleSim and Matlab. The model is controlled using parameter optimization to evaluate golf club design decisions.
- Delivered the completed model to an outside industry partner along with documentation on how to use and modify the model to evaluate golf clubs.
- Measured golfer motion and extracted swing information using portable EMG, IMU (MVN Suit), and motion capture (Eagle Vision infrared cameras) systems.
- Managed Linux server including web sites, file shares, and wiki pages.

University of Waterloo Waterloo, ON
B.A.Sc. - Systems Design Engineering, Dean's Honour List, Co-operative Program *2007 - 2012*

- *4th Year Design Project* - SLAM for NASA Sample Return Challenge
  - Combined Kalman Filters, Iterative Closest Point (ICP), and GraphSLAM algorithms to develop a novel approach for 6 degree of freedom simultaneous location and mapping without the use of GPS
  - Implemented the complete solution using C++ and Python on top of the ROS ecosystem.

Personal

Crash Ultimate - KW Guelph Competitive Ultimate `crashultimate.ca`
Captain *2013-*

- Elected captain of National Championship winning team in 2014

Hobbies: Singing (A Cappella and Barbershop in particular), Ultimate Frisbee, Soccer, Basketball