Daniel Johnson

Graduate Student, Systems Design Engineering, University of Waterloo
142 Wood St. Apt B Kitchener, ON

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dan@ddajohnson.com
(226)-989-0511
http://ddajohnson.com

Goal: To work with a team solving interesting problems in biomechanics and technology. I'm passionate about competitive sports and my ideal position would involve using technology to improve athlete performance, training, or coaching.

Skills

- **Development:** Objective-C/Cocoa, C/C++, Python, MATLAB, Git, iOS, Unity
- **Modeling:** 2-D and 3-D Dynamics and simulation of multibody systems, control systems
- **Application Design:** Designed, built, and released applications for iOS, Mac, Windows, and the web: both in the workplace and on my own time
- **Experimentation:** Designed and executed experiments involving human subjects and processed the resulting data
- **Self-driven:** Motivated to perform individual research projects with minimal direction
- **Learning:** Loves to learn new things and explore new ideas. Quick to pick up new skills and technologies as required

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. Digitally processed the resulting signals to extract features from the golf swing for comparison to simulation data.
- Managed Linux server including web sites, file shares, and wiki pages.

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

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 code. This application was used by the iOS Location team to develop and test indoor positioning systems.
- Developed an improved location algorithm using Kalman Filters for determining an iOS device's location during indoor positioning.

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

- Developed 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

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

Personal Projects

Bearded Baritones Website nodeJS, Javascript, HTML & CSS
`github.com/proverbialsunrise/baritonesWebsite` *2015*

Space Shooter Game Unity, C#
`ddajohnson.com/shooter/shooter.html` *2015*

pySTL Python
`github.com/proverbialsunrise/pySTL` *2014*

Hymnal Mobile Application Objective-C, C++, Java
`github.com/proverbialsunrise/hymnalapp` *2010*

Awards

- *Ontario Graduate Scholarship* - Sep 2013
- *NSERC Alexander Graham Bell Scholarship* - Sep 2012
- *NSERC Undergraduate Student Research Award* - May 2011

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