Daniel Johnson

Graduate Student, Systems Design Engineering, University of Waterloo
135 Moore Ave, Waterloo, ON, N2J1X4

dan@ddajohnson.com
(226)-989-0511

November 12, 2014

Goal: To work with a team to solve interesting problems related to human movement and technology. In particular, I'm passionate about playing sports competitively and using technology to improve athlete performance or training would be my ideal role.

Skills

- **Development:** Objective-C/Cocoa, C/C++, Python, MATLAB
- **Modeling:** 2-D and 3-D Dynamics, Simulation of mechanical systems, control systems
- **Robotics:** Autonomous Mapping, Computer Vision, Image processing.
- Discovering and implementing new ideas. Give me a problem to solve and I'll find a way to solve it.
- Communication: excels at writing clear and concise documents and presenting and explaining ideas.
- Learning: loves to learn new things and explore new areas of technology.
- Leadership: organizes and enables others to perform their tasks. Leads by example.

Education

University of Waterloo Waterloo, ON
Masters of Applied Science - Systems Design Engineering *2012-2014(est.)*

- Created a comprehensive golfer swing model using MapleSim and Matlab for evaluating golf clubs
- Includes a 4 degree of freedom golfer with realistic joint torques as inputs, a flexible shaft modelled using Rayleigh beam theory, an impulse-momentum impact model, and an aerodynamic flight model for the ball
- Implemented control algorithms to optimize the golf swing for different simulated clubs.

University of Waterloo Waterloo, ON
BASc - Honours Systems Design Engineering, Co-operative Program *2007 - 2012*

- ***SYDE 461/462**: Sep 2011-Apr 2012* - Developed robot location and mapping algorithms for the NASA Sample Retrieval Challenge.

Work Experience

Apple Inc. Cupertino, CA
Software Engineering Intern - iOS Location Software *Sep-Dec 2010 and Jan-Apr 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
- Developed an improved location algorithm using Kalman Filters for determining an iOS devices location in a particular type of environment

University of Waterloo (Vision and Image Processing Lab) Waterloo, ON
Research Assistant *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++.
- Gained knowledge of current computer vision algorithms and techniques
- Supervised another student building a website for the lab using Drupal

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

- Tested hand held GPS devices for accuracy and interface usability.
- Developed and performed experiments on software keyboards for mobile devices.
- Established reliable methods for testing software on Windows Mobile.

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

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

Other Activities

Hymnal Mobile Application Objective-C, C, Java
Personal Programming Project *2010*

- Developed a mobile application for iPhone and Android to search and display hymns

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

- Elected to lead a group of 25 adults in playing ultimate frisbee
- Managed emotions, team focus, and a variety of personalities in pursuit of excellence leading to a National Championship in 2014.

Awards

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

Personal

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