

## Daniel Johnson

M.A.Sc., B.A.Sc.

142 Wood St. Apt B Kitchener, ON

June 22, 2015

dan@ddajohnson.com

(226)-989-0511

<http://ddajohnson.com>

**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, MATLAB, Git, iOS, Unity
- **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.
- **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



## Trimble Navigation

GPS Software Tester

Christchurch, NZ

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

Software developer

Waterloo, ON

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

Masters of Applied Science - Systems Design Engineering

Waterloo, ON

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

B.A.Sc. - Systems Design Engineering, Dean's Honour List, Co-operative Program

Waterloo, ON

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

Captain

crashultimate.ca

2013-

- Elected captain of National Championship winning team in 2014

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