

Daniel Johnson

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

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 robotics and control systems.

Skills

- **Modeling:** 2-D and 3-D Dynamics and simulation of multibody systems.
- **Control Systems:** Practical experience with optimal control of biomechanical models. Theoretical training in multi-variate, adaptive, and optimal control and state estimation techniques
- **Development:** C/C++, Python, MATLAB, MapleSim, Git, Objective-C, Linux
- **Experimentation:** Designed and executed experiments involving human subjects and processed the resulting data to estimate parameters for system modelling and control
- **Communication:** Excels at writing clear and concise documents and explaining ideas
- **Learning:** Love 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, 3-D, forward dynamic, golfer swing model using MapleSim and Matlab. The model is optimally controlled to allow for evaluation of golf club designs.
- Delivered the completed model to an industry partner along with complete documentation.
- Excelled in courses in multivariate, adaptive, and optimal control systems.

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

Work Experience

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 linux web server for hosting the lab website

Apple Inc.*Software Engineering Intern - iOS Location Software*

Cupertino, CA

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.
- Presented the completed application to senior management after being selected as the best intern project of the term.
- Developed an improved location algorithm using Kalman Filters for determining an iOS device's location during indoor positioning.

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

Personal Projects**Bearded Baritones Website**github.com/proverbialsunrise/baritonesWebsite

nodeJS, Javascript, HTML & CSS

2015

pySTLgithub.com/proverbialsunrise/pySTL

Python

2014

Hymnal Mobile Applicationgithub.com/proverbialsunrise/hymnalapp

Objective-C, C++, Java

2010

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