

# DYLAN JOHN DROVER

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## SUMMARY

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I have extensive research and development experience in machine learning and software design. My ability to learn quickly and adapt is bolstered through my MAsC research, external employment, and numerous cooperative work placements during my BAsC. I have a diverse skill set which is focused on machine learning and software design but extends to robotics, computer vision, and data science.

## TECHNICAL SKILLS

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- C, C++
- Python
- MATLAB, R
- Keras, TensorFlow
- SciPy, SciKit-Learn
- Javascript, HTML, CSS
- Linux, Git
- ROS, OpenCV
- L<sup>A</sup>T<sub>E</sub>X

## EXPERIENCE

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**Machine Learning Research Group at the University of Guelph** GUELPH, ON, CANADA  
Research Technician *October 2016 – present*

- Developing machine learning solution for [classification of local climate zones using satellite imagery](#)
- Developing agricultural plot segmentation and analysis web tool for aerial agricultural imaging
  - Client code built using Google Polymer library and Javascript
  - Server built using Node.js, Python and OpenCV
- Working with Dr. Graham Taylor

**University of Waterloo** WATERLOO, ON, CANADA  
Graduate Research Assistant *September 2014 – present*

- Research focused on method for predicting geriatric fall risk based on walking accelerometer data
  - Statistical analysis was conducted to assess usefulness of turn or walking data for fall risk prediction
  - Classification models were developed which allowed prediction of fall risk with high accuracy
  - Developed algorithm to segment turning sections from accelerometer walking data
- Teaching Assistant for C++ based Data Structures and Algorithms course (four terms)
- Supervised by Dr. Jonathan Kofman and Dr. Edward Lemaire

**Clearpath Robotics** KITCHENER, ON, CANADA  
Robot Whisperer *May – August 2013*

- Developed autonomous local navigation methods for Clearpath Robotics rover platforms
  - Implemented using either laser range finder sensor or Microsoft Kinect data
- Researched replacement components for robotic platforms
- Validated and tested Robot Operating System (ROS) packages for robotic platforms

**Télécom Bretagne** BREST, FRANCE  
Computer Interaction Research and Design Developer *September – December 2012*

- Developed finger gesture recognition algorithm based on finger path
- Developed hand tracking software which recognized position and angle of hand using Microsoft Kinect point cloud data
- Integrated existing disparate code-base into an organized object-oriented paradigm

## PUBLICATIONS

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**Drover, D.**, Howcroft, J., Kofman, J., Lemaire, E. (2017). Fall Classification in Older Adults using Wearable Sensors: Investigation of Turn and Straight-Walking Accelerometer-Based Features. Submitted for publication.

## EDUCATION

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**University of Waterloo** WATERLOO, ONTARIO, CANADA  
MAsC, Systems Design Engineering *2014 – present*

Thesis Title: "Classification and Analysis of Wearable-Sensor Features for Fall Prediction in Older Adults: Comparing Turning and Straight-Walking Accelerometer Data"

**University of Waterloo** WATERLOO, ONTARIO, CANADA  
BAsC, Honours Mechatronics Engineering, Co-operative Program *2008 – 2014*