ANGUS LEIGH

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EDUCATION

M.Sc., Computer Science, *McGill University, Montreal, QC* *Sept 2013–August 2015 (expected)*
Specialization in robotics, machine learning and computer vision. *Advisor:* Joelle Pineau

B.A.Sc., Systems Design Engineering, *University of Waterloo, ON* *Fall 2008–Spring 2013*
German minor. With Distinction. Cumulative GPA: 87%

Study Abroad Semester, *Technische Universität Braunschweig, Germany* *Fall 2011–Spring 2012*
Completed full engineering course load in foreign language

EXPERIENCE

Graduate Research Assistant, *Reasoning & Learning Lab, McGill University* *Fall 2013–present*

- Developing vision, navigation and control techniques for an autonomous powered wheelchair
- *Current project:* Vision-based robot localization using deep learning
- *Completed project:* Autonomous person detection, tracking and following with 2D laser scanners

Robotics Engineering Student Developer, *Siemens R&D, Munich, Germany* *Summer 2012*

- Developed a simulated robotic model of a new concept of electric car using C++, Robot Operating System (ROS) and Unified Robot Description Format (URDF)

Undergraduate Research Assistant, *PAMI Lab, University of Waterloo* *Summer 2011*

- Updated a muscle fiber action potential simulator to reflect recent findings in the literature

Systems Design Engineering Student, *Durridge Co., Billerica, MA, USA* *Winter 2011*

- Contributed to the development of a novel Radon-detection device
- Wrote firmware in C, modified electrical schematics in EAGLE and placed orders with manufacturers

Undergraduate Research Assistant, *VIP Lab, University of Waterloo* *Fall 2010*

- Created a novel method for comparing image noise reduction and estimation techniques in MATLAB

Design Engineering Student, *Automation Engineering Associates, Toronto, ON* *Summer 2010*

.NET Programmer, *Human Resources Canada, Ottawa, ON* *Fall 2009*

Engineering Assistant, *Hatch Ltd., Mississauga, ON* *Winter 2009*

PUBLICATIONS

A. Leigh, J. Pineau, N. Olmedo and H. Zhang, "Person Tracking and Following with 2D Laser Scanners", *Accepted to the International Conference on Robotics and Automation (ICRA)*, Seattle, Washington, USA, 2015.

A. Leigh and J. Pineau, "Laser-based Person Tracking for Clinical Locomotion Analysis", *IROS Workshop on Rehabilitation & Assistive Robotics*, Chicago, Illinois, USA, 2014.

A. Leigh, A. Wong, D. A. Clausi and P. Fieguth, "Comprehensive analysis on the effects of noise estimation strategies on image noise artifact suppression performance", *IEEE International Symposium of Multimedia*, Dana Point, California, USA, 2011.

LIVE DEMONSTRATIONS

M. Gerdzhev, J. Pineau, **A. Leigh** and A. Sutcliffe, "SmartWheeler - A smart robotic wheelchair platform", demonstrated at *Neural Information Processing Systems (NIPS)*, Montreal, Canada, 2014.

PROJECTS

Stochastic pooling for convolutional neural networks, *Graduate class project* *Fall 2014*

· Implemented a convolutional neural network and benchmarked modern pooling functions (Python)

Semantic robot mapping using laser scanners, *Graduate class project* *Fall 2013*

· Improved a semantic mapping technique through the use of a machine learning method (Multi-class Adaboost) designed to reduce classification error of minority classes (Python and MATLAB)

Autonomous object-following quadrotor, *4th Year B.A.Sc. Design Project* *Winter 2013*

· Computer vision, gimbal visual servoing, electrical and hardware integration and rotor control in C++, OpenCV and ROS for two prototypes

TEACHING EXPERIENCE

Teaching Assistant, *McGill University*
COMP-424: Artificial Intelligence *Winter 2015*
COMP-598: Applied Machine Learning *Fall 2014*
· Delivered guest lecture on online learning

AWARDS

Graduate Research Award ($18 000) *2014*
Tenured at McGill University

McGill Graduate Excellence Award ($4 000) *2013*
Tenured at McGill University

NSERC Canada Graduate Scholarship - Master's ($17 500) *2013*
Tenured at McGill University

Ontario Graduate Scholarship ($15 000) *2013*
Not tenured

Best design project of 4th year engineering class ($500) *2013*

VOLUNTEER EXPERIENCE

Robotics Competition Referee, *First Lego League, Montreal, QC* *2014*

· Observed matches to ensure fair play and a smoothly operating tournament (single day)

Bicycle Repair Mentor, *University of Waterloo, ON* *2012–2013*

· Taught bicycle repair techniques at the university's student bicycle shop (two hours/week)

SKILLS

Programming	Python, C/C++, MATLAB
Robotics	ROS, OpenCV, Gazebo, URDF
Computer	Linux, Git, LaTeX
Languages	English (native), German (fluent), French (intermediate)