

Ben Hudson

benhudson@fastmail.com · (226) 600-1054

GitHub · LinkedIn

EDUCATION

University of Waterloo

June 2018

Bachelor of Applied Science, Mechatronics Engineering (GPA: 4.0/4.0)

Waterloo, ON

- Graduated with highest academic honours (Dean's Honours and Distinction).
- Thesis project won 7 awards for engineering and entrepreneurial excellence, totalling \$25,000.

Delft University of Technology

August 2016 - February 2017

International Student Exchange

Delft, Netherlands

RELEVANT EXPERIENCE

Blaise Transit

October 2018 - Present

Research Lead

Montreal, QC

- Applied RL/IL to vehicle routing algorithms to achieve real-time performance for large numbers of tasks.
- Developed a novel learned heuristic for these problems, capable of solving an un-seen problem **10x faster** than the base algorithm (while remaining within 10% of the optimal solution) using Python and Tensorflow.
- Served as the industry lead on several collaborative research projects (NSERC).
- Prepared grant proposals, with >\$100,000 awarded over the last year.

Apple, Exploratory Design Group

Winter 2016

R&D Intern

Cupertino, CA

- Designed and executed of experiments to characterize the sensitivity of measurement equipment.
- Post-processed and analyzed experimental data using Minitab, Python and C++.
- Selected and validated electronic components for an experimental power-delivery system.
- Implemented features, tests and bugfixes in Verilog for the power-delivery system's FPGA-based controller.

Carbon Robotics

Summer 2015

R&D Intern

San Diego, CA

- Created a demonstrable prototype of a novel, low-cost industrial robotic arm design in 4 months.
- Modeled the design's highly-coupled and non-linear kinematics.
- Implemented and tuned joint angle controllers for the prototype using model-based and feedback control.
- Developed serial communication drivers (I²C, SPI, UART) and firmware in C (ARM).

PROJECTS & PUBLICATIONS

Areas for technology innovation in the East African off-grid energy sector

May 2019

Publication · Waterloo Institute for Sustainable Energy

P2P energy sharing for remote and developing regions

September 2017 - April 2018

Thesis Project · BASc, Mechatronics Engineering

- Designed and prototyped a modular, low-cost, smart energy infrastructure as part of a team of 4.
- Awards: Engineer of the Future Award, Norman Esch Entrepreneurship Award, Mechatronics Alumni People's Choice Award, Cowan Prize, Velocity Pitch Competition (1st), Hult Prize @UWaterloo (3rd), Ace the Pitch Competition (3rd)

Waterloo Aerial Robotics Group

Winter 2015

Member · Student Engineering Team

- Implemented motion planning algorithms (Dubins paths) in C for computation on board a fixed-wing aerial robot.
- Identified and fixed issues in several aerial and terrestrial robots' electrical and firmware subsystems.
- Mentored younger students in software and hardware development.