

FIRST LAST NAME

3B Mechanical Engineering, University of Waterloo

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OBJECTIVE

To obtain a creative and technically challenging 4-month engineering internship, starting in May 2018.

TECHNICAL SKILLS SUMMARY

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| • Advanced automotive knowledge with a focus on electric vehicle technologies. | • Strong understanding of GD&T, machine design, drawing detailing and weld specification. | • Cast component design. |
| • CATIA V5, Solidworks, and AutoCAD advanced user. Basic NX and Inventor experience. | • Machining (manual vertical milling, horizontal lathe, 3-axis CNC milling). | • Composite layup/infusion (Carbon fiber, fiberglass). |
| • Structural FEA using Solidworks Simulation and ANSYS. | • Metal fabrication (6+ years experience with GMAW, GTAW, SMAW, plasma and oxy-fuel). | • PLC and general automation programming (AGVs, area scanners, microcontrollers, etc.) |
| • Multi-material joint design. | | • Experienced with MATLAB, Simulink, C++, RobotC, and Arduino IDE. Basic working knowledge of Python. |
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WORK EXPERIENCE

Mechatronics Vehicle System Laboratory, Engineering Research Assistant Sep 2017 – Dec 2017

- Made major contributions to the design of a large high-voltage lithium-ion battery pack for use in the transport trucking industry. The pack is employed on a first-of-kind prototype trailer-assist system.
- Developed control logic in Simulink and MATLAB for use in a three-wheeled electric modular vehicle platform, to improve the ease in which novel control algorithms can be implemented on the vehicle.
- Developed an electronic fuel injection and digital spark system for cam-less engine research.

Tesla Inc, Body in White Design Engineering Intern Jan 2017 – May 2017

- Submitted 15+ engineering design changes for current production Model X and Model S vehicles, addressing quality, manufacturability, and cost improvements. Components modified included high-pressure die castings, stamped aluminum panels, aluminum extrusions, and structural adhesive applications paths.
- Developed and executed an evaluation procedure for new arc-welding filler materials.
- Investigated the impacts of cast material thickness variation on self-piercing rivets in multi-material joints.
- Collaborated with third-party vendors to develop multiple injection-molded elastomer plugs for body sealing.

BWX Technologies Canada Ltd, Weld Development Co-op May 2016 – Sep 2016

- Major design contributor in the development of next-generation waste container systems for the Bruce Power reactor refurbishment program. Designs developed to conform with rigorous IAEA and ASTM codes.
- Worked with lead weld engineer to troubleshoot material and weld defects. Engineered solutions to manufacturing process issues using CAD and CAE software.
- Gained experience in a wide range of advance manufacturing methods including heavy-deposition submerged arc welding (SAW), strip cladding, heat treatment, and general heavy industrial fabrication.

Toyota Motor Manufacturing Canada (Lexus), Conveyance Engineering Co-op Sep 2015 – Dec 2015

- Responsible for the development and maintenance of component delivery systems for the Lexus RX350.
- Developed and modified automatically guided vehicle (AGV) systems for part delivery.
- Worked with engineering consulting firms and contractors to develop new machinery.
- Responsible for co-ordinating sections of the assembly plant re-tooling during the 2016 RX350 and 450h launch.

- Toyota Motor Manufacturing Canada (RAV4), Quality Control Engineering Co-op** Jan 2015 – May 2015
- Fuel system and wire harness QCE on current production 2015 Toyota RAV4.
 - Responsible for the active and passive quality control through root cause analysis, FMEA, and data collection.
 - Worked directly with Tier 1, Tier 2, and in-house component suppliers to maintain/improve quality.
 - Developed tolerance-tracking system and investigated tolerance stacking for the 2016 RAV4 forward collision mitigation system (Toyota Safety Sense).

- Rowland Concrete Services Ltd, Labourer/Foreman** Summers Jun 2012 - Aug 2014
- Formed, poured, and finished a variety of concrete installations. Lead a small crew of labourers in final season.

EDUCATION/CERTIFICATIONS

- Candidate for Bachelor of Mechanical Eng., Co-op Program, University of Waterloo** Sep 2014 - Present
- Additional circuits, signal processing, and instrumentation classes taken to support interest in electric vehicles.
- Introduction to GTAW Welding, Conestoga College (Part Time)** Sep 2015 - Dec 2015
- Passed informal 2G, 5G, and 6G destructive testing.

EXTRACURRICULAR

- Waterloo Formula Electric, Team Captain** Jun 2016 - Present
- The team of over 60 undergraduate engineering students designs and builds a new electric race car each year to compete in the Formula SAE Electric series.
 - Heavy involvement in all aspects of designing, building, and racing over the past 3 seasons.
 - Major past projects include architecting the 2018 powertrain system, development of a dyno testing system, braking force characterization, cooling system optimization, and high-voltage shielding enclosure design.
- WEEF Elected Student Representative and Funding Council Member** Sep 2014 - Present
- Responsible for reviewing funding proposals and voting on per-term fund distribution.

Personal Projects

- BMW E30 Track/Drift car. Swapped a Mustang 5.0l V8 engine into a 1991 BMW E30, custom rear-end frame work, custom brake system, custom electrical.
- Ratcheting, hand powered tube bender for 1.75" diameter thin wall DOM.
- Dual chamber, reverse-flow meat smoker with cold smoking tower and adjustable baffles.
- Designed, programed, and built a robot using LEGO NXT capable of playing tic-tac-toe with a user. Wrote an unbeatable game algorithm. Received 100% in addition to a bonus mark for the project (ME101).
- Automated chicken doors and watering system with intermittent circulation operated by an Arduino.

Sports

- 2009-2014 High school and Summer (OMFL) Football, Assistant Captain 2012 and 2014.
- 2006-2013 Division 1 Alpine Ontario Ski Racing, 2012 Combined Caledon Ski Club Champion, 2013 U18 Most Improved Athlete, 2012 Alpine Ontario All-Star competitor.

ADDITIONAL INFORMATION

- Unrestricted G-class driver's license.
- Willing to travel and/or relocate for work.
- Canadian Citizen