Austin **Luu**

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Education

Ryerson University *Toronto, ON, Canada*

B.Eng in Mechanical Engineering *Sep. 2016 — Apr. 2021*

- GPA: 3.70 | Dean's Honour List
- Awards: Mechanical Eng. First Year Alumni Award | Robotics International Society of Manufacturing Engineers Award
- Relevant Courses: Stress Analysis, Manufacturing System Control, Mechanics of Machines, Vibrations, Statics & Dynamics

Technical Skills

Design	SolidWorks (CSWA Certified), AutoCAD, Autodesk Inventor, ANSYS, GMSH, SOFA, FMEA
Manufacturing	FDM 3D Printing, Laser Cutting, Turning, Milling, Drilling, Welding, Soldering
Programming	MATLAB, C/C++, Java, Python, VBA, JavaScript, LaTeX, Octave, VHDL, Ladder Logic
Misc.	GIT, ENOVIA, Microsoft Office, CRM, Teamcenter PLM, Adobe Photoshop

Experience

Celestica *Toronto, ON, Canada*

Product Data Analyst *May 2019 — Present*

- Initiated and managed Aerospace & Defense value engineering cost saving projects. Reducing excess inventory by over 20% and expanding customer AVL portfolio by over 15%, leading to an annual cost savings of $1.5 million
- Managed $5 million in global Aerospace & Defense cross-functional sourcing projects with manufacturing, quality engineering, commodity management, and planning departments to enable material procurement and manufacturing for customers: Safran, UTC, Honeywell, and L-3 Harris
- Developed VBA macros for; consolidating & analyzing performance metric reports, consolidating & scrubbing customer BOMs for product data management, and neural network predictive analysis of component cost based on description

Ryerson Rams Robotics *Toronto, ON, Canada*

Mechanical Design Co-lead *Sep. 2016 — Present*

- Design and manufacturing of an autonomous science console for life detection on mars comprised of an auger intake and centrifuge carousel storage utilizing ATP Bioluminescence and Ninhydrin Test protocols
- Piloted development and evaluation of dynamic and static force model simulations in MATLAB for technical enhancements and modifications to existing designs, increasing drive train structural integrity by over 35%
- Redeveloped system architecture of rocker bogie and differential bar mechanisms using SolidWorks & ANSYS FEA; decreasing weight and moment forces for the URC2019 competition, placing 2nd internationally
- Led an agile team of 15 in designing and developing an autonomous robot capable of expanding 150cm in height, repetitive lifting of 10lb, and omni-directional drive; placing 1st nationally over the 2018 & 2019 VEXU competitions

Ryerson University *Toronto, ON, Canada*

Research Assistant *Sep. 2020 — Jan. 2021*

- Re-evaluated project requirements and led mechanical design ideation for soft robotic continuum arm application on UAVs, drawing inspiration from hydrostatic skeletons and muscular hydrostat structures in nature
- Designed and modeled soft robotic continuum arm in SolidWorks and applied FEA in GMSH, SOFA, and ANSYS to analyze and simulate mechanical behaviour
- Led literature review and application towards research publication of potential technologies in Aerial Manipulation Systems

Projects

Portable Machine Shop

Capstone Project @ Ryerson University *2021*

- Designed a $4,400 portable machine shop which fits in the bed of small sized pickup trucks directed towards contract manufacturing, maintenance, and competitive engineering design teams for convenient machining of small metal and plastic parts utilizing milling, turning, and drilling operations
- The design is a custom extruded sheet metal cabinet consisting of a COTS mill and lathe with stowable add-on tool shelves for expanding workspace area and mounting additional power tools. With a built in winch and ramp for easy transportation
- Project analysis consists of a top-down functional approach towards FMEA, human factor considerations, and static loading FEA for component validation

Helmet Impact Tester

Term Project @ Ryerson University *2020*

- Designed a helmet factor of safety testing machine capable of impacting helmets at 28m/s with a force of 60N across six impact locations using three pneumatic piston end effector mechanisms including cam followers and pawl & ratchet mechanisms
- Simulated design on an OMRON PLC utilizing PLC fiddle ladder logic software for pneumatic testing