Austin **Luu**

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Education

Ryerson University — *Toronto, ON, Canada*

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

- GPA: 3.71 | 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
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 an Aerospace & Defense value engineering cost savings project. 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
- Developed VBA macros for; consolidating & analyzing performance metric reports, consolidating & scrubbing customer BOMs for product data management, 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 portable machine shop which fits in the bed of medium to large sized pickup trucks
- The design is 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
- Project components included 3D CAD, Finite Element Analysis, Failure Modes and Effects Analysis, Engineering Drawings, Manufacturing Plans, a conference paper, and an overall design paper containing PSS, PRS, PAS, and PCS

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