Austin **Luu**

Mechanical Engineering Undergraduate

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Education

Ryerson University *Toronto, ON, Canada*

B.Eng in Mechanical Engineering *2016-2021*

- GPA: 3.74 | Dean's Honour List
- Mechanical Eng. First Year Alumni Award recipient
- Robotics International Society of Manufacturing Engineers Award recipient
- Relevant Courses: Mechatronics Systems Design, Stress Analysis, Control Systems, and Machine Learning

Technical Skills

Design **SolidWorks (CSWA Certified), AutoCAD, Autodesk Inventor, ANSYS, GMSH, SOFA**

Manufacturing **3D Printing, Laser Cutting, Turning, Milling, Drilling, Welding**

Programming **MATLAB, C/C++, Java, Python, VBA, JavaScript, LaTeX, Octave Ladder Logic**

Misc **GIT, ENOVIA, Microsoft Office, CRM, Teamcenter PLM, Adobe Photoshop**

Experience

Ryerson University *Toronto, ON, Canada*

Research Assistant *Sep. 2020 — Present*

- Re-evaluated project requirements and led mechanical design process 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

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 product variance by over 15%, leading to an annual cost savings of $1.5 million
- Coordinated and managed $5 million in global Aerospace & Defense cross-functional sourcing projects with buying, sourcing, design, and manufacturing departments to enable material procurement and manufacturing
- Consolidated, tabulated, and analyzed reports on performance metrics using Microsoft Excel, CRM, and PowerBI

Ryerson Rams Robotics *Toronto, ON, Canada*

Chassis Subsystem Lead *Sep. 2016 — Present*

- Piloted development and evaluation of dynamic and static force model simulations in MATLAB for technical enhancements and modifications to existing designs, increasing 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

Projects

Parallel Computing Drone Swarm

Team Project @ PennApps Hackathon *2018*

- Designed system and hardware architecture for a hazard detection 2D mapping robot which collects thermal, moisture, and relative location data from two autonomous IoT enabled ground drones; placing top 20th percentile
- Developed with: Python, C++, MQTT Protocol, laser cutting, 3D printing, and Arduino 101s

Bionic Arm

Team Project @ Ryerson Rams Robotics *2018*

- Designed and fabricated a prosthetic arm assembly offering 15 degrees of freedom using an Arduino mega, C++, SolidWorks & ANSYS softwares, and 3D printing
- Implemented a $150 budget design as a proof of concept to further the field of bio-mechanics in hope of making prosthetics more accessible and versatile