

Tevin Devasagayam

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PROFILE

A highly motivated Mechanical Engineering Graduate with two years of professional experience in mechanical design, electromechanical systems, robotics, stress analysis, and control systems. Over four years of hands-on experience designing and prototyping actuation systems, most recently having developed a powerful, high accuracy actuator for haptic robotics. Highly capable in various engineering disciplines with extensive project experience and an outstanding intuition for engineering design.

Technical Skills:

- CAD – SolidWorks, Fusion 360, Inventor, AutoCAD
- Office – Word, Excel, PowerPoint, MS Project
- Fabrication – 3D-Printing, Composites, Soldering, Welding, CNC, Machining, Wiring, Electrical design
- Programming – MATLAB, C++, C#, Simulink
- FEA – ANSYS APDL, F360, Inventor, SolidWorks

Professional Skills:

- Project, time management and communication
- Knowledge in DFMA philosophy
- Collaborative skills obtained through extensive personal and academic projects and work experience
- Self-motivated worker, capable of working effectively in a collaborative environment or individually

EDUCATION

Ryerson University

Toronto, ON

Bachelor of Engineering (B.Eng.) Mechanical Engineering

Sept. 2016 to Apr. 2021

3rd/4th year GPA: **3.79/4.33**

Dean's List 2018-2021

WORK EXPERIENCE

Ryerson University | Research Assistant, Haptic Robotics Engineering Design:

(May 2021 – Present)

- Rapidly designed a comprehensive 400+ component 3DOF haptic robot assembly in SolidWorks in under a month while managing a full, six course load
- Applied design-for-manufacture principles throughout to ensure manufacturability, reliability, and low cost
- Designed high efficiency, zero backlash, power dense capstan actuators on each axis for precise force feedback
- Employed a variety of fabrication techniques in the complete manufacture of the device, thereby demonstrating familiarity with such technologies and understanding of their applicability
- Demonstrated an advanced engineering intuition by anticipating and designing for possible issues resulting in a highly performing final product, vastly improved in all aspects over the previous iteration

Department of National Defence | Engineering Intern, Mechanical Design:

(Aug. 2019 – Aug. 2020)

- Performed stress analysis on various structural members, fixtures, and bolted connections
- Compiled, edited, and modified stress reports under the supervision of a P.Eng. for approval by headquarters
- Produced and revised engineering drawings in collaboration with experienced draftspersons and shop technicians to communicate design intent most effectively and verify manufacturability for production at low cost
- Collaborated with suppliers and PMO's to ensure materials' adherence to the engineering specs and standards
- Managed a project concerning the development of an Airdrop training load from conception to CDR

MTM Staffing Solutions Inc. | Data Entry Clerk:

(Feb. 2016 – June 2016)

- Learned unfamiliar software quickly and to problem solve when inconsistencies were encountered in the data

RELEVANT COURSEWORK (B.Eng.)

- Electric Machines and Actuators: **A+**
- Heat Transfer: **A**
- Applied Thermodynamics: **A+**
- Advanced Manufacturing: **A+**
- Mechanics of Machines: **A**
- Mechanical Design: **A+**
- Applied Stress Analysis: **A+**
- Project Management: **A**

AWARDS & ACHIEVEMENTS

Outstanding Co-op Employee: DND

4.28 / 4.33 TGPA Fall 2018
(5 × A+, 1 × A)

Nearly **two dozen** innovative personal and academic engineering projects

Certified SolidWorks Associate
(Scored **240/240**, completed in **109/180 min**)

Fastest Car in class: MEC 322
Manufacturing Fundamentals

STUDENT TEAM EXPERIENCE

Ryerson Helium Inc | Chief Engineering Lead:

(Jan. 2018 – Apr. 2021)

- Worked with administrative team to lead a group of over 30 members in designing a personal flying vehicle
- Oversaw five sub teams working in areas such as propulsion, electric power systems, and composite structures
- Invited to join the team and promoted to Engineering Lead upon demonstration of high skill and capability

SELECT PROJECTS

Astrophotography Star Tracker:

(Dec. 2019 – Feb. 2020)

- Produced a low, cost high accuracy star tracker for long exposure astrophotography employing a compact, high reduction rotary reduction system
- Reduced cost relative to commercial products by a factor of 10 while maintaining actuator positional accuracy within 0.01%

Four-Stroke Go-Kart:

(July 2018 – Sept. 2018)

- Designed and built a go-kart using a power washer engine and steel tubing
- Rapidly self-taught metal-working and welding
- Extensively problem-solved, trouble-shot, and improvised

Elastic Powered Car:

(Feb. 2018 – Mar. 2018)

- Designed a miniature rubber-band powered car with an innovative spiral pulley and clutch mechanism to optimize performance
- Greatly exceeded requirements and produced the fastest car in the class which the instructor subsequently requested to retain as a demo

3D Printed Drone:

(Sept. 2017 – Nov. 2017)

- Built an entirely 3d printed drone designed in CAD
- Designed and installed the complete electrical power and control systems
- Manufactured and iterated through several prototypes before settling on a final design