Nick Phan

Mechanical Engineering Student in Hamilton, Ontario

- A 3rd-year Mechanical Engineering at McMaster University seeking an internship starting May 2020
- Designed multiple rocket models and troubleshot structural issues for the McMaster Rocketry Team
- Constructed an improved Mars Rover chassis for the McMaster Mars Rover Team
- Played a key role in organizing the Ontario Rover Rally in the summer of 2019

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PROFESSIONAL EXPERIENCE

McMaster Mars Rover Team Hamilton, Ontario
Manufacturing Specialist 09/2019 - present

- Designed and developed more stable chassis for the working Mars rover prototype
- Machined wooden parts for a Rover prototype based on technical sketches using the bandsaw, drill press, and various hand tools
- In-depth collaboration with design team members on GrabCAD Workbench

McMaster Rocketry Team Hamilton, Ontario
Structural Team Lead 08/2019 - present

- Led the structural team to design and construct C-class rocket models as prototypes for the G-class sounding rocket
- Modeled and constructed finite element analysis (FEA) on multiple versions using Autodesk Fusion 360 and SolidWorks
- Created technical drawings of parts in accordance with ASME Y14.5 GD&T standards
- Improved rocket efficiency by reducing the weight of 3D printed parts by 40%, allowing more space for avionics
- Set up a launch simulation of the design using Simulink and thrust data provided by the motor manufacturer, Estes
- Currently attempting to implement a 3D-printed thrust vectoring system for the C-class rocket

EDUCATION

McMaster University Hamilton, Ontario
Bachelor of Engineering: Mechanical 09/2018 - 04/2023

- Courses: Mechanics, Manufacturing Engineering, Statics of Materials, Dynamics of Materials, Thermodynamics

Online Courses

- Autodesk Fusion 360 Integrated CAD/CAM/CAE on Coursera
- 3D Model Creation with Autodesk Fusion 360 on Coursera
- Engineering Design Process with Fusion 360 on Coursera
- MATLAB Onramp
- Simulink Onramp

VOLUNTEER EXPERIENCE

Ontario Rover Rally
05/2019 – 08/2019
Provides a risk-free event for Rover teams to test out their creations and generate excitement for space

- Raised funds and obtained swag through contact with 3 main sponsors
- Managed small-scale logistics and made purchases to make sure the event runs smoothly
- Worked 12 hours a day for 2 weeks to build an obstacle course for the event's Rover Race

PROJECTS

Robot Arm
05/2020
Developing a 3D-printed robot arm with 9g hobby servos to study inverse kinematics

Self-Feeding Catheter
01/2020
Received 3rd place overall in the 2020 McMaster Designathon

- In a team of 4, designed a semi-automatic implementation of the Seldinger technique for catheter insertion

Sumobot
11/2019

- Designed, built, and programmed an autonomous sumo robot