

RIDDHIMAN ROY

@ riddhiman.roy2015@gmail.com

Toronto, ON, Canada

SEEKING 12-16 MONTH (PEY) CO-OP STARTING IN MAY 2023

riddhimanroy.com

riddhiman-roy

riddhimanroy1010

EDUCATION

BASc in Aerospace Engineering

University of Toronto

September 2020 – June 2025 (Expected)

3rd Year Engineering Science student Majoring in Aerospace Engineering, Minor in Robotics with a Certificate in Business

SKILLS

Python

Computer Aided Design

C

MATLAB

Tooling

Web Design

Rapid Prototyping

Microcontrollers

Quick Learner

Problem Solver

Collaboration

EXPERIENCE

Research Intern

Department of Civil and Mineral Engineering, UofT

May 2021 – Ongoing

Toronto, ON, Canada

Summer 2022

- Developed and optimized an automated, multi-threaded web-scraper to acquire over 70,000 data points from the IEA Policy Database, reducing runtime from 12 hours to 12 minutes
- Analyzed these policies using Python and SQL to study feasibility of greenhouse gas mitigation pathways for light vehicles, contributing to ongoing research projects

Fall 2021

- Received a casual employment contract to work with SPM and researchers from the University of Nottingham and CATARC to discuss the future of national fleet-wide life-cycle emissions models.
- Developed efficient costing algorithms to predict the cost of vehicle ownership based on cost of manufacturing, fuel and others with graduate students to investigate the relationship between vehicle survival rates and lifetime emissions.

Summer 2021

- Received ESROP-UofT grant to work on climate research with the Saxe-Posen-Maclean (SPM) research group.
- Demonstrated feasibility of transferring US national vehicle fleet lifecycle emissions model (FLAME) from R to Python with a proof-of-concept that became the foundation for the new version of FLAME.

Developer on Project DarkMatter

University of Toronto Aerospace Team

Oct 2020 – Ongoing

Toronto, ON, Canada

- Designed and implemented a new class structure for various required processes and components such as combustion, propulsion, fluid and pressurant in Project Dark-Matter, UTAT's engine simulator, aiding in the transfer from MATLAB to Python.

ACHIEVEMENTS

2nd Place

Biomedical Engineering Competition (BMEC 2021)

February 2021

Toronto, ON

Designed 'Mediway' - an application to route ambulances to reduce ER stress and physician burnout - and its information flowchart and the user interface

Most Feasible Design Award

BMEC 2022

February 2022

Toronto, ON

Designed "Le Penguin", a device to help Alzheimer's patients regulate their sleep cycles and maintain brain stimulation.

Wrist Design Lead

Robotics for Space Exploration

May 2022 – Ongoing

Toronto, ON, Canada

- As Wrist Design Lead, currently designing a new wrist for the team's robotic arm with delta joints to maximize arm strength and reach while minimizing cost and weight, targeting robotics competitions
- For last year's arm, designed a camera mount onto the arm with space and strength constraints to house and cool a small camera that the rover uses for surveillance and control.

Robotics Engineer

University of Toronto Designathon

February 2022

Toronto, ON, Canada

- Rapidly designed, manufactured and tested a small scale prototype of a robot, designed to autonomously store and retrieve parcels, specialized to the needs of small business, for a university wide design competition, demonstrating to commercial stakeholders

L1 Certification Launch

Upstate Rocketry Research Group

June 2022 - July 2022

Toronto, ON, Canada

- Built and simulated an H-class motor rocket with delay-charge recovery with parachutes to be launched in upstate New York, USA for an L1 Certification (by the Tripoli Rocketry Association) launch.

Pad Engineer

Launch Canada

May 2021 - August 2021

Toronto, ON, Canada

- Redesigned existing test stand to accommodate a new test site and manufactured the aforementioned new test stand for Launch Canada's Liquid Rocket Engine Test Campaign, to test an LR-101 LOX-Kerosene Engine (capable of 4.5kN of thrust).