

NIKHIL MENDA

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see nikhilmenda.space for my website and [portfolio](#)

Highly motivated engineering physics student looking to pursue a career in the space industry.

EXPERIENCE

Queen's Rocket Engineering Team

Propulsion Lead

May 2021 - Present

- Leading a multidisciplinary team of 15+ students to design, manufacture, test, and launch a hybrid rocket engine to reach a 10,000ft apogee from scratch.
- Guiding the design and manufacturing a propulsion test stand involving a range of systems such as electrical control, data acquisition, high pressure systems and more.
- Managing progress and delegating work using a custom built team dashboard in Notion and implemented the usage of Kanban boards.
- Developed initial design requirements and currently optimizing engine design using Python.
- Developed the budget requirements for the system and responsible for the deployment of \$16,000 of capital.

Propulsion Safety Officer

May 2020 - April 2021

- Developed safety guidelines and outlined the design requirements for construction and operation of our hybrid rocket engine.
- Created standard operating procedures (SOPs) to maintain range safety during test fires.
- Created checklists to ensure the cleanliness of oxidizer systems.
- Built and tested a mini-hybrid rocket engine with a custom oxidizer tank that held 6 N₂O chargers.

Undergraduate Research Project

September 2021 - December 2021

An Investigation of Magnetic Radiation Shields for Human Space Habitats

- Collaborated with 3 undergraduate students to design and conduct an experiment in 6 weeks to measure the viability of superconducting magnets as a radiation shield for space travel applications.
- Responsible for the experiment ideation, majority of initial research and preliminary design of the experiment.
- Designed data collection procedures involving scintillators, photo-multiplier tubes and high voltage sources. Utilized oscilloscopes for troubleshooting and calibration.

Research Assistant, PICO Dark Matter Search Experiment

May 2020 - August 2020

SNOLAB, Supervised by Dr Anthony Noble

- Designed components for the next generation PICO 500 Dark Matter detector using SolidWorks.
- Analyzed thousands of neutrino events stored on FermiLab and ComputeCanada servers using Linux CLI and Python.
- Developed part of an interactive exhibit to communicate the science and engineering behind PICO using Python and a Raspberry Pi.

EDUCATION

Faculty of Engineering, Queen's University

Class of 2023

- Candidate for Bachelor of Engineering Physics, Computing option.

GPA: 3.5/4.3

Publications

Investigation of Magnetic Radiation Shields for Human Space Habitats (Corresponding author)

Julian Awad, Nikhil Menda, William Conway, and David Puddy, "Investigation of Magnetic Radiation Shields for Human Space Habitats," J. Undergrad. Eng. Phys. Phys. Exp. Queens, Section 1, Vol 3. submitted