

# Matthew Nutbean

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## Education

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**Bachelor of Science in Engineering — Mechanical Engineering with Distinction** June 2025  
University of Manitoba — Concentration: Aerospace Stream — GPA: 4.1

## Technical Skills

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**CAD:** Onshape, SolidWorks

**Programming:** MATLAB, Python

**Tools:** LaTeX, Valinspace, Asana, Notion, Microsoft Office, Google Drive

## Projects

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**University of Manitoba Space Applications and Technology Society (UMSATS)** 2022 – 2024  
Recovery Co-Lead (Two Design Cycles)

- Led the design, construction, and implementation of rocketry's parachutes and tethering
- Programmed a simulation to verify rocket's descent velocity fell within the required range
- Attended the Launch Canada Challenge (LCC) 2023 and Spaceport America Cup (SAC) 2024

**University of Manitoba Robotics Team (UMRT)** 2023 – 2025  
Chassis Lead (Two Design Cycles)

- Led the design and manufacturing of chassis for the team's first two rovers
- Attended the Canadian International Rover Challenge (CIRC) 2024 and 2025
- Achieved 11<sup>th</sup> place out of 20 teams in CIRC 2024

**Outerspace Agricultural System (OASYS)** September 2024 – December 2024  
Engineering Design/Capstone

- Worked with the Canadian Space Agency (CSA) to create the system design of OASYS
- Collaborated with subsystem teams from various universities across Canada
- Created a CAD assembly of OASYS to display the high-level system design

## Lab Experience and Research

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**Space Technology and Advanced Research Laboratory (STAR Lab)** May 2022 – April 2025  
Undergraduate Researcher

*Funding: University of Manitoba Undergraduate Research Awards (2022, 2023); NSERC Undergraduate Student Research Award (2024)*

*Undergraduate Thesis: Relating Virtual Slip of Rover Wheels to Soil Motion*

- Designed and constructed a single-wheel testbed which a PhD student used for their research
- Selected major electronic components and aided with the software for the testbed
- Discovered a relationship between wheel slippage and boundary layer thickness of soil

## Awards and Honours

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- John Shewchuk Engineering Design Award (2025)
- Mike Zahn Scholarship in Mechanical Engineering (2022)
- Dean's Honour List (2019-2025)