

# Reuben Jacob

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## SUMMARY

Third-year Mechanical Engineering student at the University of Toronto (B.A.Sc. 2028, GPA 3.6, Dean's Honour List) specializing in Mechatronics & Energy with a minor in Sustainable Energy. Experienced in CAD (SolidWorks CSWA), engineering design, machining, and prototyping, with proven experience collaborating on client-focused projects. Strong communicator and passionate about leveraging my design and programming skills to develop innovative vehicular technologies and sustainable transportation systems.

## EDUCATION

### University of Toronto – Toronto, ON

**Expected: June 2028**

*B.A.Sc. Mechanical Engineering + PEY Co-op | Minor: Sustainable Energy | GPA: 3.60/4.0 | Dean's Honor List*

- Relevant courses: Energy Policy and Environment, Thermodynamics, and Mechanics of Solids I

## EXPERIENCE

### University of Toronto Underwater Exploration (UTUX)

**Nov. 2024 - Present**

*Software Team Member*

*Toronto, ON*

- Student-led design team of 200+ students developing UUVs and providing hands-on engineering experience.
- Collaborating with a cross-disciplinary team to develop a ROS2 control node, translating force/moment commands into reliable motor outputs for an autonomous underwater vehicle.

### Mechanical Engineering Design

**Sept. 2024 - Dec. 2024**

*Team Member*

*Toronto, ON*

- Collaborated with a team of four to apply the engineering design process, developing four candidate designs for a hobbyist CNC machine and modelled the final design using SOLIDWORKS.
  - Produced CAD models and 10+ detailed engineering drawings that earned a 90% grade and TA commendation.

### Engineering Strategies & Practice II

**Jan. 2024 - Apr. 2024**

*Communication Liaison*

*Toronto, ON*

- Worked in a group of 6 and partnered with a client to design a low-cost dust collection system for a hobbyist table saw.
  - Led client communications to schedule meeting times & location to discuss and document design specifications. Documented meeting outcomes in an engineering notebook for subsequent analysis.
  - Developed a successful prototype of the final design under \$200 and presented findings to the client who expressed great satisfaction with the design.

### Flight Commander

**Sept. 2022 - June 2023**

*631 Sentinel Royal Canadian Air Cadets Squadron*

*Scarborough, Toronto, ON*

- Led cadet flight by delegating tasks, conducting drills, and inspecting uniforms to uphold standards and discipline.
- Planned and coordinated a squadron sports night, assigning duties to senior cadets and organizing game rotations to ensure an engaging and memorable event for the squadron.

## PROJECT

### Upgraded Toy RC Car (Personal)

**July 2025 (Completed)**

- Retrofitted a budget toy RC car with variable steering/throttle and ATMEGA328P-controlled LED brake, turn, and headlights, completing the system for under \$70 while gaining experience in soldering and wiring.

### 3D Printed Gear Reducer (MIE 243)

**Dec 2024 (Completed)**

- Engineered and 3D-printed a parallel 12:1 gear reducer in SOLIDWORKS and validated durability via high-load drill testing for 30+ seconds without failure.

## CERTIFICATIONS, SKILLS & INTERESTS

**Certifications:** SOLIDWORKS CAD Design Associate (Dec 2024), George Brown Basic Machining Course (Mar 2025)

**Technologies:** SOLIDWORKS, ANSYS, VS code, Ubuntu, GitHub, MATLAB, MS Office (Outlook, Excel, Teams), Notion

**Skills:** Python (pandas), C++, Object-Oriented Programming, ROS2 (Humble), Git, Soldering & Wiring

**Engineering Skills:** Written Communication, Machining (lathe, mill, drill press), FEA, Drafting, 3D printing

**Interests:** Driving, Road trips, *Kerbal Space Program*, Biking, Cars, Trains & Planes