

Victor Habiyambere

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EDUCATION

University Of New Brunswick, Saint-John, NB

Class of 2027

- Bachelor of Science in Mechanical Engineering, mechatronics option
- Coursework Includes: Thermodynamics, Computer Aided Design (CAD), Dynamics

RELEVANT PROJECTS

Electric Pump-Fed Liquid Rocket Engine (ME1312) | *SolidWorks, Python, FEA, AxSTREAM, GD&T*

September 2025 – Present

- Conducted kinematic and dynamic analysis of turbopump (500 RPM input), quantifying angular velocity (600→3000 deg/s), acceleration (480 deg/s²), and torque behavior
- Led end-to-end design of an electric pump-fed liquid rocket engine, integrating turbopump-driven propellant feed, injector, and nozzle systems
- Derived combustion chamber and nozzle geometry using MIT Rocket Team design methodology for LOX/RP-1 systems
- Optimized mechanical interfaces and tolerances (interference fits, bearing clearances, runout constraints) to ensure high-speed rotational stability and manufacturability; continuing refinement to establish a propulsion development foundation for UREPL

Single-Stage Rocket (Zaphod) | *SolidWorks, MATLAB, Python, OpenRocket, FEA, GD&T*

September 2025 – Present

- Led the development of UNB's first solid-fuel, single-stage rocket targeting a 10,000 ft apogee for the Launch Canada Challenge
- Defined system architecture, mass budget, and component selection for full vehicle integration
- Performed structural and mass analysis on rocket subsystems to validate design constraints
- Developed a high-fidelity simulation model in OpenRocket/Python to predict flight performance

EXPERIENCE

Service New Brunswick (SNB), Program Delivery Officer, Saint-John, NB

June 2025 – August 2025

- Built a dynamic and scalable Excel tool using Visual Basic for Applications (VBA) to analyze and report on the performance of program delivery officers.
- Aggregates key operational data (e.g., new applications, follow-ups, completed apps) and provides automated visual summaries for both individuals and the team. Streamlined the auditing process for supervisors, reducing manual workload and increasing accuracy in performance tracking

LEADERSHIP

UNB Rocket Engineering & Propulsion Laboratory (UREPL), Co-President, Founder, Saint-John, NB

June 2024 – Present

- Founded and led UREPL, a 30+ member engineering lab advancing propulsion and rocket system development at UNB
- Secured \$4000+ in external funding to support rocket development initiatives
- Established organizational structure and led multidisciplinary engineering teams
- Ratified under both the UNB Student Union (Fredericton) and the UNB Student Representative Council (Saint-John)

Peer Notes Volunteer Student Accessibility Center (SAC), Saint-John, NB

September 2023 – April 2024

- Created and uploaded notes for APSC1011(Statics), ENGG1003(Technical Comms.) and MATH1503(Linear Algebra)
- Earned a Letter of Appreciation from the Associate Vice-Provost Student Affairs and Services

TECHNICAL SKILLS

Engineering & Analysis: SolidWorks, Ansys, MATLAB, Python, AxSTREAM, FEA

Programming: Python, C++, C#, Java

Embedded Systems: ESP32