Victor Habiyambere

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EDUCATION

University Of New Brunswick, Fredericton NB — Class of 2028

- Bachelor of Science in Mechanical Engineering — **2025-2026 GPA: 3.5 (Year 3)**
- Related Coursework: Thermodynamics, Computer Aided Design (CAD), Statics and Dynamics, Electric Circuits

PROJECTS

Single-Stage Rocket (Zaphod) | *SolidWorks, Ansys, OpenRocket, FEA, 3D Printing, UREPL*

September 2025 – Present

- Led development of UNB's first solid-fuel, single-stage rocket for the Launch Canada Challenge, targeting a 10,000 ft apogee
- Designed and built the motor mount sub-assembly, avionics sled, and camera/payload mount (3D Printed); attached fins and engineered the dual-parachute recovery system (10,390 ft drogue / 500 ft main) including designing and wiring the avionics harness connecting redundant altimeters to dual ematch-triggered ejection charges
- Authored the rocket build plan sequencing a 1-month hands-on integration phase
- Designed and planned ground ejection tests to validate flight readiness ahead of launch
- Conducted fin flutter analysis, column buckling analysis and recovery system load calculations on the Zaphod Rocket
- Co-authored the engineering report for UREPL's Launch Canada Challenge submission

Electric Pump-Fed Liquid Rocket Engine (ME1312) | *SolidWorks, CFD, GD&T, UREPL*

Jan 2026 – April 2026

- Led end-to-end design of an electric pump-fed liquid rocket engine, integrating turbopump, propellant feed, injector, and nozzle systems
- Derived combustion chamber and nozzle geometry using MIT Rocket Team design methodology for LOX/RP-1 systems
- Performed CFD analysis on the liquid rocket engine using SolidWorks Simulation
- Optimized mechanical interfaces and tolerances (interference fits, bearing clearances, runout constraints) to ensure high-speed rotational stability and manufacturability, establishing a reusable tolerance framework for UREPL's future turbopump designs
- Conducted kinematic and dynamic analysis of turbopump (500 RPM input), quantifying angular velocity (600→3000 deg/s), acceleration (480 deg/s²), and torque behavior

LEADERSHIP

UNB Rocket Engineering & Propulsion Laboratory (UREPL), *Co-President, Founder,* Fredericton, NB

June 2024 – Present

- Founded and led UREPL, a 30+ member engineering lab advancing propulsion and rocket system development at UNB
- Authored and pitched sponsorship proposals to external companies, securing $11,000+ in funding to support rocket development initiatives
- Secured full UNB Engineering funding to cover travel, accommodation, and food for a 1-week trip to the Launch Canada Challenge
- Ratified under both the UNB Student Union (Fredericton) and the UNB Student Representative Council (Saint-John)

AWARDS

M. Patrick Gillin Award for Engineering Scholarship ($6000)

July 2026

Awarded to the top 10 undergraduate engineering students annually

IEEE Special Grant Award for Autonomous Quadcopter Project ($860+)

April 2026

Selected as one of only 3 award recipients nationwide

WORK 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

TECHNICAL SKILLS

Engineering & Analysis: SolidWorks, Ansys, CFD, FEA, 3D Printing, OpenRocket, RockSim, VBA, GD&T **Programming:** Python, C++, C#, Java