Nahum Samson Abebe

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EDUCATION

University of Calgary, Schulich School of Engineering Calgary, AB,
Bachelor of Science in Engineering - Mechanical Engineering; Minor in Entrepreneurship and Enterprise *Expected May 2029*
Cumulative GPA: 3.3

EXPERIENCE

Autonomous Underwater Vehicle Club - Mechanical Design Captain 2025 - 2026
University of Calgary Calgary, AB

- Created CAD assemblies, component models, and engineering drawings in Fusion 360 and SolidWorks for an autonomous underwater vehicle.
- Designed and iterated a dual-gripper retrieval mechanism integrating two servos and an RGB color-sensor mount, balancing function, reliability, and manufacturability.
- Coordinated mechanical interfaces with electrical and software teammates during design reviews, assembly, testing, and troubleshooting.

FIRST Tech Challenge Robotics - Design Captain 2022 - 2024
Nelson Mandela High School Calgary, AB

- Lead mechanical design of competition robots, including gripper-claw and hook mechanisms for reliable game-object manipulation and retrieval.
- Integrated DC motors, mechanical linkages, and color sensors; collaborated with programmers to support autonomous navigation and task execution.
- Prototyped, tested, and troubleshot systems under competition constraints, contributing to a Gold Medal at the Southern Alberta Championship.

2025 Skills Competition - Team Captain 2025

- Built a robot from the ground up to accurately launch snowballs, applying mechanical design, fabrication, assembly, testing, and troubleshooting under competition constraints.

PROJECTS

Remote-Controlled Rescue Boat | *Fusion 360, 3D Printing, Laser Cutting, Electronics* February 2026

- Designed and fabricated an 8-lb rescue boat from concept to working prototype; led the team's Fusion 360 modeling and 3D-printing work through three hull iterations.
- Improved buoyancy, stability, waterproofing, and maintainability through iterative prototyping, obstacle-course trials, endurance testing, and structured wire management.
- Integrated DC motors, Bluetooth control, power systems, and soldered connections; diagnosed connectivity issues and inconsistent motor performance.
- Delivered a stable, waterproof, fully operational prototype that met all final demonstration requirements.

Laptop Theft-Prevention Device | *Independent Project, Nelson Mandela High School*

- Independently designed, built, and tested a functional laptop theft-restriction device commissioned by the school principal, translating a real security need into a working hardware solution.

LEADERSHIP

Lifeline Volunteering Association 2026 - Present
Outreach Executive Calgary, AB

- Support community outreach initiatives and volunteer-led events by organizing programs, engaging participants, and coordinating administrative tasks.
- Collaborate with fellow volunteers to deliver programs and services that benefit members of the local community.

FIRST Tech Challenge Outreach Lead
Participated in community outreach by demonstrating our robot, explaining the design and building process, and introducing younger students to robotics. Helped promote STEM education and encouraged students to explore engineering, programming, and teamwork.

TECHNICAL SKILLS

CAD: AutoCAD (4+ years), Autodesk Fusion 360, SolidWorks
Fabrication: 3D printing, laser cutting, soldering, mechanical assembly, prototyping
Hardware: DC motors, servos, color sensors, Bluetooth modules, power systems, Oscilloscope
Programming and Analysis: Python, Microsoft Excel; engineering data analysis and visualization

AWARDS AND CERTIFICATIONS

Honours: Southern Alberta FTC Championship Gold Medal; Calgary Athletic Booster Club Scholarship (2025)
Credentials: Schulich School of Engineering Leadership Tier 1 Badge (2026); Standard First Aid and CPR (2022)