

Orion North

Sustainable Energy Engineering Student | Electromechanical Integration & Test

Surrey, BC orion.north2026@gmail.com linkedin.com/in/orion-north-6339762a0 github.com/Orion-North orionnorth.ca

EDUCATION

Simon Fraser University

Expected 2031

Bachelor of Applied Science, Sustainable Energy Engineering

SELECTED ENGINEERING PROJECTS

2026 FIRST Robotics Competition Robot | Team 7190

Jan-Mar 2026

- Designed the robot chassis in Fusion for a four-module swerve drivetrain, plus the geared turret, centering indexer, and kicker; added the indexer after prototype agitators repeatedly jammed the hopper.
- Completed the electrical build for a 12+ motor robot, routing 12 AWG high-current power circuits plus CAN, motor-controller, encoder, gyro, and vision harnesses with serviceable WAGO connections.
- Diagnosed CAN and power faults, restored a collision-damaged swerve-module harness between matches, and drove during an alliance-selected playoff run.

S.O.L.A.R. 12-DOF Quadruped | Personal robotics project

Feb 2026-Present

- Designed and printed the PLA-CF chassis and component interfaces for a four-leg robot with 12 MG90S servos and TPU feet.
- Integrated an ESP32-CAM, PCA9685 servo driver, MPU-6050 IMU, 2S LiPo, 5 V 5 A BEC, solar charger, and two 5 V 1 W panels.
- Verified each servo channel and its calibration mapping, demonstrated browser-controlled walking, and confirmed solar-panel charging with a multimeter.

EXPERIENCE AND LEADERSHIP

Templeton Robotics | President, FIRST Teams 7190 and 7332

Mar 2025-Jul 2026

- Led a roughly 50-member, two-team robotics program across build planning, technical training, competition preparation, outreach, and club operations.
- Mentored students in CAD, electrical integration, prototyping, and troubleshooting; personally raised more than CA\$35,000 through sponsorships and grants.

BGC Engineering | Engineering Intern

Mar-Jun 2024

- Maintained and troubleshot an augmented-reality terrain sandbox using Linux, depth-sensing hardware, projection, calibration, and interactive visualization software.
- Contributed to drone operational planning, safety procedures, and field checklists.

Templeton Secondary Drone Division | Founder & President

Jan 2023-Jul 2026

- Founded a student aerial-robotics program, trained operators in safe flight and hardware fundamentals, and maintained operating procedures and equipment logs.
- Contributed to flight planning, safety documentation, and inspection-workflow development for a building-inspection project.

TECHNICAL SKILLS

CAD & fabrication: Fusion 360, 3D printing, PLA-CF, TPU, aluminum and sheet-material cutting, bandsaw use, mechanical assembly

Electrical: Power distribution, CAN bus, motor controllers, encoders, sensors, vision hardware, 12 AWG motor wiring, WAGO connectors, DMM, cable management

Hardware & systems: roboRIO, REV SPARK-series controllers, Limelight, Pigeon 2.0, ESP32-CAM, PCA9685, MPU-6050, Linux