Shervin Nabavi

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Education

BASc Mechatronic Systems Engineering, Simon Fraser University – Vancouver, BC *Sep 2021 – Aug 2026*

- GPA: 4.06 / 4.33.

Work Experience

Mechanical Engineering Co-op | Human in Motion Robotics – Vancouver, BC *Sep 2024 – Aug 2025*

- Authored step-by-step assembly procedures and documentation for a 12-DOF exoskeleton, translating complex CAD assemblies into clear work instructions for 10+ interdependent assemblies across torso, leg, and foot.
- Conducted first-article inspection of components according to ASME Y14.5 GD&T standards and precision measurement equipment, validating manufacturer-reported tolerances.
- Performed hand-assembly of first-production exoskeleton units, integrating and validating motors, motor drivers, and sensors while ensuring adherence to ISO 10218 robotics safety standards.
- Evaluated and selected alternative actuators and encoders for future robot platforms, building comparison tables across cost, performance, and size, while engaging suppliers to inform sourcing decisions.
- Designed production aids, using FEA to validate structural performance under load prior to manufacturing.
- Assisted in performance testing and control loop tuning of custom in-house BLDC motors and drives.

Hardware Engineering Co-op | Netgear – Richmond, BC *May – Dec 2023*

- Designed and fabricated a custom current sensing device, incorporating precise component selection, custom PCB design, and development of embedded software for data observation and logging.
- Performed thermal stress testing of prototype products, executing statistical analysis on test data to identify performance trends and preparing detailed results for cross-team distribution.
- Conducted RF and electrical validation testing to verify prototype performance and industry compliance.
- Designed and manufactured custom buck converter circuits to assist in component selection for future products.

Project Experience

UAV-Based CO_2 Sensing System | Vancouver, BC | Taipei, Taiwan | Seoul, South Korea *Jan – Aug 2026*

- Led a five-person engineering team in building a UAV-based platform for real-time environmental sensing, mapping and visualization inside industrial greenhouses with field testing across Canada, Taiwan, and Korea.
- Designed the mechanical enclosure for the aerial sensing payload, packaging a multi-component electronics stack and strategically positioning components to enable passive cooling, validated through CFD analysis.
- Designed a custom interface PCB to integrate multiple onboard sensors with the platform's compute system, and led component sourcing across the system's hardware to optimize for weight and cost.
- Led the team's international field deployment to National Taiwan University and Seoul National University, testing the platform at their research facilities and presenting findings to graduate students and faculty.

Publications

S. Nabavi, R. Al-Hanna, J. Alexander, A.M. Ismail, D. Garcia *et al.*, "UAV-Enabled Spatiotemporal CO_2 Mapping for Greenhouse Climate Digital Twin Development," *[In Preparation]*, 2026.

Skills & Qualifications

- **CAD & Design:** SolidWorks, Fusion 360, KiCad, GD&T (ASME Y14.5), Safety (ISO 10218), DFA, DFM, DFAM
- **Programming & Simulation:** MATLAB, Simulink, Python, C/C++, FEA, CFD
- **Relevant Coursework:** Robotic Kinematics, Machine Design, Additive Manufacturing, Mechatronics Design

Awards

- **9** × SFU Open Scholarship, **6** × SFU Alumni Scholarship