Behrad Rakhshanfar

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Education

University of British Columbia **Class of 2027**
B.A.Sc. — Integrated Engineering (Major: Mechanical | Minor: Electrical) *4.05/4.33 CGPA*

Simon Fraser University **2023 - 2024**
B.A.Sc. (Transferred to UBC) *4.09/4.33 CGPA*

Technical Skills

- **Languages**: C++, C, Matlab, LaTeX, Python
- **Developer Tools**: SolidWorks, Excel, VS Code, Arduino IDE, VHDL
- **Hands-on Skills**: Laser Cutting, Woodworking, Soldering

Technical Work Experience

Oxygen8 — (View Project) Vancouver, Canada
Mechanical Engineering Intern - CO-OP **May 2025 – Dec. 2025**

- Designed and routed wiring harnesses for 50+ HVAC systems in SolidWorks, generating production-ready BOMs in Excel and cutting assembly time by 2-10 hours per unit
- Created 3D wiring-BOM models and drawings in SolidWorks, lowering defects caught in quality control by 40%
- Diagnosed and rebuilt a broken SolidWorks routing environment after a workstation swap, restoring 100% functionality and preventing production delays

UBC Rover — Rover Lab (View Website) Vancouver, Canada
Mechatronics Engineer **Sept. 2025 – Present**

- Designed a SolidWorks soil-processing life-detection system, boosting accuracy by 50% and reducing weight by 30%
- Bench tested life-detection prototype using Arduino IDE, iterating for reliability and verifying performance
- Collaborated with experts and subteams to deliver spec-compliant solution, ensuring compliance with competition rules

Microtel - HSK (Phone Service Centre) Tehran, Iran
Engineering Intern **May 2024 – August 2024**

- Diagnosed and repaired hardware issues across 100+ phones using Samsung diagnostics achieving a 90% success rate
- Optimized troubleshooting of key electronic components using a multimeter, cutting diagnosis time by 20% and improving repair efficiency
- Developed hands-on expertise in Soldering and replacing micro-components, increasing repair precision
- Collaborated with senior technicians on complex hardware issues, enhancing technical troubleshooting skills

Rocketry Club — SFU (View Website) Vancouver, Canada
Software Engineer **Sept. 2023 – June. 2024**

- Designed and implemented a C++ module to automate the storage of rocket specifications in XML format by integrating user input and simulation altitude within a 3-week timeline, reducing manual data entry errors by 30%
- Utilized online resources to identify and integrate C++ libraries, ensuring full compliance with software requirements
- Built a rocket simulation project on Unreal Engine, enabling control via arrow keys and implemented physics, achieving a functional prototype

Technical Projects

Rocket Injector and Fuel Casting — UBC (View Project) **Jan. 2025 – April 2025**

- Co-led design of an NX based impinging injector and TIG welded pressure vessel for 60,000 ft rocket, ensuring compatibility via CFD/FEA
- Achieved 100% air seal for a 60 PSI pressure vessel by modifying, testing, and TIG welding stainless steel
- Oversaw NX-based impinging injector design, obtaining a discharge coefficient of 0.89 while ensuring complete functionality with the pressure vessel

Line Following Robot — UBC (View Project) **Oct. 2024 – Dec. 2024**

- Developed a fully autonomous robot using C language and sensor reflection data, capable of precise 90-degree turns
- Optimized then soldered circuits using 5 reflective sensors, enhancing circuit efficiency and connection accuracy by 20%
- Designed and 3D-modeled a custom sensor holder in OnShape within one day, optimizing surface detection
- Enhanced troubleshooting skills through extensive testing and iterative code adjustments in C language to ensure the robot met all functional specifications