UBC Science Co-op
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Kamyar Momeni

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Education

University of British Columbia Vancouver, Canada
B.S in Engineering Physics, Minor in Commerce *September* 2022–*May* 2026
Overall GPA: 3.9

Skill Sets

Mechanical: SolidWorks 3D, SolidWorks Drawing, FEA Analysis with ANSYS and MSC Apex, CFD analysis with ANSYS
Electrical:PCB design with KiCAD and Altium, Soldering
Software: Git, C/C++, Java, Arduino, MATLAB, Python, Basic Algorithms and Data Structures, Software Constructione
Laboratory: Oscilloscopes, Multi-meter, Machining, Laser Cutter, Water-Jet Cutter, AD2 (Oscilloscope, Logic Analyzer and Variable Power Supply)

Experience

Mechanical Engineering Co-Op January 2024 – May 2024
LB Foster *Vancouver B.C*

- Created detailed 3D models and 2D drawings of train-mounted components, including assemblies, subassemblies, and parts with complex geometries.
- Integrated design criteria such as weight, material selection, and dimensional tolerances to optimize for manufacturability.
- Performed FEA using MSC Apex to verify structural integrity and ensure parts met safety standards for mounting.

Battery Mechanical Senior Member January 2023 – Present
University of British Columbia *Vancouver B.C*

- Performed airflow simulations in SolidWorks and ANSYS to analyze airflow through the battery pack.
- Assembled multiple cell modules using spot welding and soldering techniques.
- Conducted impedance testing to evaluate battery cell characteristics, including capacitance, impedance, and discharge limits.
- Designed and built the battery control board, determining optimal wire gauges and layout for the pack.

Projects

Summer Robot Design Project July 2024 – August 2024

- Gained hands-on experience in designing and prototyping complex engineering systems, integrating mechanical and electrical components for optimal performance.
- Involved in the complete product development life cycle, including requirements analysis, initial concept ideation, detailed design, prototype assembly, and functional testing.
- Utilized CAD software (SolidWorks) to design mechanical components.
- Designed and implemented electrical circuits for power regulation and Schmidt triggers, enabling digital signal transmission to the microcontroller (ESP32).

ENPH 353 Machine Learning Project September 2024 – present

- Developed autonomous robots capable of completing specified tasks using computer vision and sensor fusion.
- Designed and implemented control algorithms for autonomous navigation, obstacle avoidance, and task execution.
- Programmed embedded systems for real-time sensor data processing and motor control using C++ and ROS (Robot Operating System).
- Conducted iterative testing and refinement to optimize robot performance, ensuring reliable operation in diverse environments.