

Asad Warind

awarind@uwaterloo.ca | [LinkedIn](#) | [GitHub](#) | [Portfolio](#)

EDUCATION

University of Waterloo

Waterloo, ON

B.A.Sc. Honours Mechanical Engineering, Co-op

GPA: 3.9/4.0

- **Relevant Courses:** Circuits; Materials (Structure & Properties); Linear Algebra; Mechanics; French B

EXPERIENCE

Battery Test Engineering Intern

Sep. 2026 – Dec. 2026

Harbinger Motors

Garden Grove, CA

- **Automated a battery enclosure torsion durability test** using Arduino and pneumatic controls, enabling continuous testing across **157,000+ cycles over ~19 days**
- **Characterized test repeatability and enclosure response** using sensor error, cycle-time, displacement-time, and pressure-displacement data to assess **temperature effects and changes in system stiffness over the durability test**
- **Localized HV isolation faults in two ~200 V battery modules** using voltage tracing and insulation measurements, narrowing each fault from **450+ cells to an individual cell location**

Battery Mechanical Lead

Sep. 2025 – Present

Waterloo Formula Electric (FSAE)

Waterloo, ON

- **Designed the 2027 HV accumulator container** in SolidWorks using 5052-H32 sheet metal and self-locating tab-and-slot assembly to simplify assembly while meeting packaging and HV safety constraints
- **Performed structural and weld analysis** for wall bending, shear, torsion, and weld-group loading, validating hand calculations with **ANSYS FEA** under **40g longitudinal/lateral and 20g vertical loads** with a minimum ~1.5 factor of safety
- Applied **DFA** principles to redesign **HV DC cable routing** in SolidWorks, improving HV-LV clearance by 20%

Engineering Intern

Jan. 2026 – April 2026

Novika

Waterloo, ON

- Programmed **30+ full-stack features** using **React/TypeScript** to increase user interaction coverage by **40%** for an interior design platform
- Improved product usability by debugging UI/backend issues and incorporating user feedback during **rapid startup development** cycles

EXTRACURRICULAR PROJECTS

Arduino Pan-Tilt Actuation System | *Arduino, Power Sizing, System Debugging*

Oct. 2025 – Nov. 2025

- Designed and built an **Arduino-controlled pan-tilt actuation system** achieving 120° horizontal and 30° vertical motion using 3 MG995 servos with **RC joystick control**
- **Decoded RC receiver PWM signals** and applied signal smoothing to reduce servo jitter by **90%** and prevent over-rotation
- Utilized hand calculations to **size RC servo power system** with dual 6 V NiMH packs in parallel to achieve a 48-minute worst-case run time and servo voltage requirement

Shuttlecock Aerodynamics Model | *Excel, Experimental Testing, Data Analysis*

Jan. 2025 – May 2025

- **Designed drop-test experiments** to estimate terminal velocity of 6.9–7.0 m/s and drag constant of $0.00173 \pm 0.00005 \text{ m}^2$
- Built iterative flight model using **Newtonian mechanics and drag force** calculations at $\frac{1}{60} \text{ s}$ time steps in **Excel**, validating results against flight data
- Predicted drag-driven optimal launch angle shift from 38.52° to 28.61° across 10–40 m/s launch speeds

TECHNICAL SKILLS

Mechanical Design & Analysis: SolidWorks, ANSYS FEA, AutoCAD, DFM/DFA, 3D printing, GD&T

Programming & Data: Python, Matplotlib, Pandas, MATLAB, SQL, Supabase, Git, Excel, TensorFlow

Electrical: LabVIEW, wiring, crimping, soldering, DCIR/ACIR, Arduino, DMM, HV Systems

HOBBIES

- Running, soccer, cooking, automotive reviews, travel & hiking