

Mira Chew

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Education & Selected Projects

BS Olin College of Engineering, 3.72 GPA, Mechanical Engineering Sep 2022 – Dec 2026
Aluminium Welded Load-Bearing Furniture Project

- Modeled, analyzed (FEA), & TIG welded multifunctional aluminum furniture w/ integrated wood via SolidWorks

Laser Wizard Tag Project

- Developed wireless ESP8266-based laser tag system w/ custom circuit design, IR sensor arrays & Arduino live web dashboard

TECHNICAL EXPERIENCE

Johnson & Johnson Surgical Robotics R&D Medtech Mechanical Engineering Co-op May 2024 – Dec 2024
Designed precision mechanisms, sensors, actuators, & gearboxes for surgical robotics using SOLIDWORKS, 3D printing, GD&T, & technical drawings.
Custom Gearbox Project (Oct–Dec 2024) Santa Clara, CA

- Designed & prototyped helical, bevel, & spur gearboxes in SOLIDWORKS / GearTeq; tested torque smoothness & backlash across 6 printed iterations (SLS / SLA)
- Collaborated with manufacturers on injection-moldable revisions to reduce costs & assembly time

Precision Assembly Fixturing (Jun–Jul 2024)

- Developed GD&T fixtures for custom torque-sensors; achieved <0.1 mm repeatability on Instron
- Designed pneumatic test rigs to quantify component life cycles (10,000+) & analyze mechanical failure
- Standardized setups, cutting manual assembly time by 30 %

Mechanical Component Integration (Sep–Oct 2024)

- Designed multifunctional aseptic interfaces between capital equipment & instruments in SOLIDWORKS
- Optimized injection-molding DFM; refined joining (heat-staking, fusing, latching) for reliability

Farm-ng Hardware & Mechanical Engineering Co-op May 2025 – Aug 2025
Owned design/fab for autonomous tractors (SOLIDWORKS, CNC, welding, laser cut, powder coat)
Hydraulically Interconnected Suspension (Jul–Aug 2025) Watsonville, CA

- Enabled 27 wheel articulation via simplified linkages; consolidated weldments to cut cost ~20% & assembly time ~35%

Production & Assembly Support

- Fabricated ~300 components (~75 unique); verified fit, serviceability, & electrical integration

Olin Baja SAE Senior Engineer, Design & Fabrication Lead Sep 2022 – Dec 2024
Chassis/drivetrain design, fabrication, & integration for a single-seat off-road vehicle; mentored 30 members across design, manufacturing, & testing.
Chassis & Safety Optimization Needham, MA

- MIG-welded frame structures; supported FEA-based stiffness & safety reviews in team design cycles

UW Machine Learning & Robotics Lab Robotics Research Intern Summer 2020 & 2021
Designed iterated, & printed optical sensor mounts for robotic arm tracking. Seattle, WA

AppEsteem Corporation Software Development Intern Sep 2021 – May 2022
Developed front & back end of data visualization widgets using React JS & REST API Bellevue, WA

REI Co-op Bike & Snow Repair Shop Technician Mar 2022 – May 2024
Diagnosed & repaired drivetrains, brakes, & suspensions; trained new staff basic mechanical skills Bellevue, WA

FIRST Robotics — Team Voltage Founder & SW/HW Lead Aug 2017 – Mar 2022
Led 8-member robotics team; designed & programmed competition robot (PTC Creo, Java OOP) Bellevue, WA

SKILLS

Mechanical Design & Fabrication: SOLIDWORKS, Fusion 360, GD&T, DFM/DFA, CNC (mill/lathe), MIG/TIG welding, laser cutting, fixtures, 3D printing (FDM/SLS/SLA), powder coating, rapid prototyping, assembly, automotive repair

Software & Systems Integration: MATLAB, Python, Arduino, Java, Git; sensors/actuators, FEA, embedded testing, validation

LEADERSHIP & AFFILIATIONS

Student Government Representative & photographer for Olin Strategic Communications; Senior Engineer & Fabrication Lead, Olin Baja SAE; President/Captain for Olin Soccer, Handball, & Bike Clubs; member of USA National Indoor & Beach Handball Teams