

# Mira Chew

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## Education & Selected Projects

**BS      Olin College of Engineering**, 3.72 GPA, Mechanical Engineering  
Aluminium Welded Load-Bearing Furniture Project

Sep 2022 – Dec 2026

- 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

*Designed precision mechanisms, sensors, actuators, & gearboxes for surgical robotics using SOLIDWORKS, 3D printing, GD&T, & technical drawings.*

Custom Gearbox Project (Oct-Dec 2024)

Mechanical Engineering Co-op

May 2024 – 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-ing

*Owned design/fab for autonomous tractors (SOLIDWORKS, CNC, welding, laser cut, powder coat)*

Hydraulically Interconnected Suspension (Jul-Aug 2025)

Hardware & Mechanical Engineering Co-op

May 2025 – 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

*Chassis/drivetrain design, fabrication, & integration for a single-seat off-road vehicle; mentored 30 members across design, manufacturing, & testing.*

Chassis & Safety Optimization

Senior Engineer, Design & Fabrication Lead

Sep 2022 – Dec 2024  
Needham, MA

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

### UW Machine Learning & Robotics Lab

*Designed iterated, & printed optical sensor mounts for robotic arm tracking.*

Robotics Research Intern

Summer 2020 & 2021  
Seattle, WA

### AppEsteem Corporation

*Developed front & back end of data visualization widgets using React JS & REST API*

Software Development Intern

Sep 2021 – May 2022  
Bellevue, WA

### REI Co-op

*Diagnosed & repaired drivetrains, brakes, & suspensions; trained new staff basic mechanical skills*

Bike & Snow Repair Shop Technician

Mar 2022 – May 2024  
Bellevue, WA

### FIRST Robotics — Team Voltage

*Led 8-member robotics team; designed & programmed competition robot (PTC Creo, Java OOP)*

Founder & SW/HW Lead

Aug 2017 – Mar 2022  
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