

Brian Wu

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EDUCATION

University of Illinois Urbana-Champaign

Bachelor of Science in Mechanical Engineering | Electrical Engineering Minor

Expected May 2028

GPA: 4.0 | Dean's List

Relevant Coursework: Engineering Materials, Dynamics of Mechanical Systems, Solid Mechanics, Thermodynamics

EXPERIENCE

Illini Solar Car

August 2024 – Present

Mechanical Lead (April 2026 – Present)

- Led weekly meetings to facilitate **cross-functional communication** between subteams on design architecture
- Established timelines** for 80+ members, ensuring parallel progress on current overhauls and new vehicle design

Structures Co-Lead (January 2026 – May 2026)

- Drove 13 projects** to completion in 4 months, executing design reviews to validate components for assembly integration
- Mentored 20+ members in selecting **optimal manufacturing and testing methods** for structural projects

Composites Fabrication Lead (August 2025 – May 2026)

- Directed 30+ members in the **end-to-end fabrication** of a carbon fiber chassis, from plug assembly to prepreg layup
- Developed a custom oven to thermoform foam cores, **expanding in-house manufacturability** to shorten timelines
- Designed and constructed substructures to support carbon fiber mold to **minimize warpage** during curing

Facilities and Safety Director (May 2025 – May 2026)

- Coordinated with multiple campus departments** to manage the team's workspace and equipment
- Administered safety training, compliance, and logistics for **300+ members**, maintaining a record of zero major incidents

31947 VEX Robotics Team

August 2020 – May 2024

President (May 2023 – May 2024), Team Lead (May 2021 – May 2023)

- Co-Founded and taught** a robotics program for 50+ students, partnering with the school to launch a STEM curriculum
- Guided 20+ members in designing sensor-integrated robots to achieve **two podium finishes** at national competitions

PROJECTS

Top Shell Hinge | Illini Solar Car

June 2026 – July 2026

- Applied two position **linkage synthesis** with coupler output to determine desired motion and position
- Accelerated project delivery** by integrating custom and off-the-shelf components to optimize rapid assembly

Rear Suspension | Illini Solar Car

April 2025 – March 2026

- Designed trailing arm components in NX using **DFM principles** to minimize fixtures for in-house 3-axis CNC milling
- Optimized design using **ANSYS static structural FEA**, **reducing weight by 56%** while maintaining 1.5 SF
- Analyzed principal stress directions** to optimize the arm's structural bracing, reducing torsional deformation by 40%

Battery Enclosure | Illini Solar Car

August 2024 – March 2025

- Designed and fabricated a compact battery enclosure utilizing **3D printing, composites, and metal components**
- Conceived and implemented aluminum air guides that **kept battery temperature below 35°C** during racing
- Collaborated with the electrical team to integrate components, ensuring proper fitment and accessible wire routing

Vision-Based Tactile Sensor | RoboTouch Lab Research Assistant

February 2025 – August 2025

- Prototyped optical tactile sensor with flexible waveguides, using **computer vision** to map light signals to pressure
- Devised a process to **fabricate precision molds** for fingertip sensor using 3D-printed resin and silicone casting

Automatic Foosball Table | Personal Project

August 2023 – May 2024

- Engineered a prototype, integrating structural components with custom circuits, motors, and sensors on a foosball table
- Developed an algorithm in Python to **track and predict ball movement**, automating gameplay against live players

TECHNICAL SKILLS

Software: Siemens NX, SolidWorks, Onshape, Fusion 360, ANSYS (Static Structural)

Programming Languages: Python, Java

Prototyping: 3D printing, Mill, Lathe, Waterjet, CNC Router, Laser cutting, Shop tools, Arduino, Soldering