

Alexander Wang

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Lexington, MA (Permanent) | West Lafayette, IN (Current)

EDUCATION

- **Purdue University, College of Engineering** West Lafayette, IN
Bachelor of Science in Mechanical Engineering; GPA: 4.0 May 2028 (Junior Standing)

EXPERIENCE

- **TRACE Laboratory** West Lafayette, IN
Undergraduate Research Assistant January 2026 - Present
 - Assisting with experimental research on state estimation and sensor fusion for a wearable robotic exoskeleton, utilizing novel soft fabric sensors to improve human motion tracking.
 - Conducting gait analysis experiments using a Vicon motion capture system and force plates to collect ground-truth kinematic data for algorithm validation.
- **Humanoid Robot Club Purdue** West Lafayette, IN
Mechanical Engineer August 2025 - Present
 - Designed and fabricated a 2-degree-of-freedom humanoid wrist mechanism using SolidWorks, incorporating linear actuators and ball-joint linkages.
 - Collaborated on the modeling, design, fabrication, and testing of a humanoid upper-body system with an emphasis on mechanical stability and precision.
- **EPICS - Assistive Technology** West Lafayette, IN
Design Lead August 2025 - Present
 - Led the mechanical development and optimization of an assistive mechanical horse that simulates the controlled movement of a real horse for individuals unable to participate in traditional hippotherapy.
 - Redesigned and fabricated robust wooden chassis components to replace non-durable parts, utilizing woodworking machinery (miter saws, drill presses) to improve durability and safety.
- **VEX Robotics Competition** Lexington, MA
Mechanical Engineer, Design Documenter September 2021 - June 2025
 - Designed and built wheeled robots for competition, utilizing motors, pneumatic systems, rotation sensors, Inertial Measurement Units (IMU) and more.
 - Documented the engineering design process with analytical notes, engineering drawings and computer-aided design.
 - Won a total of 28 awards, including 2 regional championship awards and placed 20th in the world.

PROJECTS

- **Coaxial Contra-Rotating Fan Mechanism (Personal Project):** Designing a compact fan system featuring contra-rotating blades driven by a single motor through a custom bevel gearbox. Currently utilizing SolidWorks to model gear geometry and validate mechanical fit for the coaxial shaft assembly.

HONORS & AWARDS

- **Dean's List & Semester Honors (Fall 2025):** Awarded for outstanding academic performance in the College of Engineering (Semester GPA: 4.0/4.0).

SKILLS

- **Software:** SolidWorks, Siemens NX, Autodesk Fusion, Excel
- **Programming Languages:** Python, MATLAB
- **Languages:** Chinese, English