

Eric Oh

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EDUCATION

Northwestern University

B.S. in Mechanical Engineering & Minor in Computer Science | GPA: 3.9/4.0

Evanston, IL

Expected June 2027

EXPERIENCE

Temple Allen Industries

Rockville, Maryland

Mechanical Engineering Intern

Jun. 2026 – Aug. 2026

- Designed and built a test rig to characterize the company's linear actuator inventory, measuring peak force and velocity under varying loads to validate manufacturer ratings against application requirements
- Calculated peak joint torque requirements for a robotic arm and evaluated linear actuator options against load, stroke, and speed criteria, sourcing and quoting candidate components
- Created and validated engineering drawings for production parts, verifying GD&T, tolerances, and BOM accuracy against as-built hardware
- Modeled and managed large multi-part CAD assemblies, resolving mates and interferences; designed a transport fixture that reduced shipping costs by \$1000 and eliminated in-transit damage

Human Augmentation via Dexterity Engineering Research Center

Evanston, Illinois

Robotics Research Assistant

Jan. 2025 – Jun. 2026

- Designed and assembled a custom PCB interfacing a 24-bit ADS1220 ADC with microcontrollers for high-speed (up to 2 kHz) strain-gauge load cell acquisition, including Wheatstone bridge signal conditioning and validation
- Developed a reusable C++ driver library implementing SPI communication for ADC configuration, calibration, and real-time data streaming across lab platforms
- Created schematics and PCB layouts in KiCad, performed breadboard prototyping and hardware debugging, and delivered a standardized sensing solution adopted lab-wide

Northwestern Formula Racing

Evanston, Illinois

Drivetrain Engineer

Sep. 2025 – Jun. 2026

- Designed and analyzed the motor differential mount in SolidWorks with FEA to verify strength, stiffness, and drivetrain alignment; added an eccentric plate for adjustable chain tensioning
- Fabricated the mount via CNC machining from engineering drawings; presented at PDRs and DRs to validate specifications and manufacturing feasibility

Korea Institute of Medical Microrobotics

Gwang-ju, South Korea

Mechanical Design Research Intern

May 2020 – Jul. 2020

- Designed and tested precision of cable-driven parallel robot prototype for applicability in physical therapy
- Derived the inverse kinematics and implemented them in a custom Python simulation; wrote Arduino firmware to command joint positions and analyzed path-following RMSE to evaluate tracking accuracy

PROJECT EXPERIENCE

5-DOF Robotic Arm | Imitation Learning Platform

Potomac, Maryland

SolidWorks, ROS 2, LeRobot, Python, 3D printing

Jun. 2026 – Present

- Designed a 400 mm reach 5-DOF arm with custom 15:1 and 30:1 cycloidal gearboxes for the base and shoulder joints, sized around a 0.2 kg payload
- Built a parametric torque budget model driving reduction ratios and capacity margins from payload and link geometry; used it to catch a shoulder joint margin below the 1.2× threshold before committing to fabrication
- Architected the arm around a LeRobot stack for teleoperated demonstration collection, specifying backdrivable wrist joints and absolute encoders for lead-through demo capture; building toward ACT policy training