# CONNOR KIERNAN

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## EDUCATION

**BACHELOR OF SCIENCE IN ENGINEERING**:
Case Western Reserve University (Cleveland, OH), Class of 2024

## EXPERIENCE

**DEVELOPMENT ENGINEER**: **(JANUARY 2025-JUNE 2025)**
Enhanced Robotic Interfaces and Experiences (ERIE) Lab

- Designing a device to perform poroelastic tonometry on a patient's limb in order to determine the aggregate modulus and permeability of the tissue. These values will then be examined for their relation to causes of tissue swelling, such as in breast cancer related lymphedema.
- Rapid manufacturing and iteration based on user feedback with in-house fabrication
- Testing approaches to minimise signal noise in high accuracy systems, especially noise from patients

**EMERGENCY MEDICAL TECHNICIAN**:
Glen Ridge Volunteer Ambulance Squad (Glen Ridge, NJ)

- Responded to medical 911 calls, provided EMT support for major town sporting events and, performed scheduled transports from home to hospital for community residents.

## PROJECTS

**SENIOR PROJECT**:

- **Integration of Force and Torque Sensing into a Surgical Robot**: Partnered with Resense GmbH to integrate their six-axis force and torque sensor into an EndoWrist, the manipulating arm of a da Vinci Surgical System.
    - Designed and manufactured parts and a process that allowed the integration of the sensor into the system
    - Performed FEA and live tests on a da Vinci Surgical System to ensure part and assembly functionality
    - Regularly met with and presented to the Resense GmbH Managing Director and Technical Director

**DESIGN AND MANUFACTURING II**:

- **Design of a Motorcycle Engine:** Worked with a team to design a flat-twin motorcycle engine, including part design, manufacturing plans, and FEA along with thermodynamics, fuel efficiency, emissions, and cooling calculations. Personally designed the engine body, crankshaft, and cylinder head.

**CWRU ROBOTICS CLUB:**

- **NASA Robotic Mining Competition**: Designed and built the excavator arm for a robot designed to mine on Mars.
- **NASA Robotic Mining Competition**: Lead for the Structure subsystem; in charge of designing the chassis and mapping the wiring for the robot.
- **National Robotics Week**: Organized events that promoted robotics on campus and in local schools; events included soldering lessons, intro to robotics seminars, and a robotics showcase.

**CWRU Chapter of the American Society of Mechanical Engineers**:

- **Founder and President**: Founded the Campus' chapter, organized events that fostered relations between local companies and members of the student body, and organized professional development events.

## SKILLS

**MACHINING**: CNC, Lathe, Drill Press, Laser Cutter, 3D Printer
**CODING LANGUAGES**: Java (Proficient), MATLAB (Proficient), Python (Intermediate), R (Intermediate)
**SOFTWARE**: AutoCAD, SolidWorks, Onshape, Microsoft Office Suite (Excel, PowerPoint, Word)