

Pearce O'Connor

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Technical Skills

CAD & Design Software: SolidWorks (Advanced, CSWP Certified), AutoCAD, Siemens NX, Inventor, Fusion 360

Simulation & Analysis: ANSYS, SolidWorks Simulation, FEA

Programming & Scripting: Python, MATLAB, G-code, Linux

Manufacturing & Processes: 3D Printing (FDM), PrusaSlicer, OctoPrint, Marlin firmware, GD&T

Professional Tools: Microsoft Excel, Word, PowerPoint, Project Management

Certifications: CSWP - Mechanical Design (05/2022), CSWA - Mechanical Design (10/2021), CPR/First Aid

Education

Northeastern University, Boston, MA

Sep 2022 – May 2027

Candidate for Bachelor of Science in Mechanical Engineering and Design | GPA: 3.34

Relevant Courses: Thermodynamics, Statics, Material Science, Cornerstone of Engineering I&II, Differential Equations

and Linear Algebra, Design Practices and Processes, Design Perspectives

Activities: NEU Bike Club, NU Downhillers, ASME Chapter Northeastern

University College Dublin, Dublin, Ireland

Sep 2022 – Jan 2023

Semester abroad program Northeastern University (NUin). Completed engineering, physics, and multivariable calculus

courses while assisting Engineering & Materials Science Center staff

Engineering Projects

Sustainable Fishing Exhibit

Nov 2024

- Designed a hands-on sustainable fishing project using a robotic arm to demonstrate inverse kinematics, teaching children about sustainable fishing practices.
- Applied the engineering design process and strict design criteria to ensure an engaging, educational, and ethically grounded interactive experience.

FDM 3D Printer Upgrade & Workflow Automation

Jun 2023

- Engineered custom hardware upgrades for an FDM 3D printer, including extruder mods for automated part removal and continuous printing.
- Developed a print automation system using OctoPrint, custom firmware, and PrusaSlicer G-code scripting, reducing manual labor and downtime by over 25%.

Work Experience

American Pool, Islandia, NY

Jun 2019-Present

Lifeguard

- Maintained safety protocols for 500+ daily pool visitors, conducting safety inspections and hazard identification
- Performed chemical analysis and water quality testing to comply with health standards and safety regulations
- Demonstrated emergency response capabilities with Red Cross and Nassau County Lifeguard (Grade 1A) certifications
- Collaborated with facility management to implement improved safety procedures and guest experience protocols

Leadership & Volunteer Experience

Roxbury Robotics

Sep 2024

- Taught robotics and engineering design using LEGO robotics with Roxbury Robotics.
- Designed a resource-sharing system, ensuring all students stayed engaged despite limited materials.
- Improved teamwork, problem-solving, and participation through a collaborative learning approach.

First Global, Mbabane, Eswatini (Swaziland)

Oct 2017 – Apr 2018

- Volunteered in assisting and guiding a new robotics club in a Swaziland secondary school.
- Taught and helped the club members in planning, building and deploying new robots for an international competition.

Honors & Activities

Academic Honors: Latin Honor Society, National Latin Award Cum Laude, National Honor Society

Leadership Experience: Robotics Club Co-President, Latin Club Vice-President (Syosset High School)

Professional Development: ASME Chapter Northeastern member, active in engineering professional community