

Saya A. Lynch

469-422-4262 | lynch178@purdue.edu | www.linkedin.com/in/saya-lynch | sayalynch.com | U.S. Citizen

EDUCATION

Purdue University - West Lafayette, IN

- **Bachelor of Science in Mechanical Engineering** — Graduating Fall 2027
- **Coursework:** Thermodynamics, Fluid Dynamics, Controls, Manufacturing, Machine Design, CAD, Electrical Engineering Fundamentals, Mechatronics.

EXPERIENCE

Toyota Automated Logistics | Robotics Design Engineer Intern

June 2026 - Aug 2026

- Reduced material porosity testing time for EOAT development by up to 90% by engineering a custom robotic vacuum test stand.
- Modeled 15+ custom plates, brackets, and mounts within a 50+ component assembly using SolidWorks.
- Produced engineering drawings implementing GD&T and DFMA principles for sheet metal bending.
- Built a first-principles flow calculator to properly size vacuum systems, implemented in Excel.

GE Appliances | Mechanical Engineering Co-op

Jan 2025 - May 2025

- Investigated UI-board failures using 3D scanning and lab testing to identify failure modes.
- Created 8+ ETPs and 5+ prototypes in Creo to validate sealing concepts through lifecycle testing.
- Deployed a final rubber seal design to the production floor, generating \$370K in annual savings.

Purdue TRACE Robotics Lab | Hardware Lead

Aug 2025 - Present

- Leading research in force-feedback control strategies for physical human-robot interaction under Dr. Gu.
- Integrated load cells, tactile sensors, STM32/Arduino, wiring, and synchronized data acquisition.
- Wrote code for processing multi-axis force data in Python to support experimental analysis and control development.

PROJECTS

Purdue Baja SAE | Drivetrain Mechanical Engineer

Oct 2024 - Present

- Redesigned rear U-joints for a larger drivetrain spline using SolidWorks after a competition failure.
- Validated joint strength to $FOS \geq 1.4$ under drivetrain torque and forces using ANSYS FEA.
- Manufactured drivetrain components using manual/CNC machining and CAM software.

NASA L'SPACE Mission Concept Academy | Systems Engineer

May 2025 - Sept 2025

- Developed the onboard computing architecture for a proposed Mars rover under reliability constraints.
- Evaluated 20+ avionics components using trade studies and technology-readiness assessments.
- Established redundant data pathways connecting rover processors, sensors, and software.

Humanoid Robot Club | Hardware Engineer

Oct 2024 - Jan 2026

- Designed hip joints and lower-body components for a bipedal humanoid robot using SolidWorks.
- Simulated center-of-mass and joint loads to validate motor sizing and robot dynamics.
- Improved component rigidity by 25%+ through iterative design validated with ANSYS FEA.

SKILLS

Software: SolidWorks, Creo, Siemens NX, Catia, ANSYS, Mastercam, Python, MATLAB, C/C++, Excel.

Technical: GD&T, DFMA, CNC & Manual Machining, 3D Printing, 3D Scanning, Arduino, STM32

Certifications: Certified SolidWorks Professional (CSWP), Solid Edge Associates, OSHA 30-Hour.