

Alex Follmer

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Education

The Ohio State University, Columbus, OH
Mechanical Engineering, Bachelor of Science

Expected Graduation: Dec. 2027
GPA: 3.65

Relevant Coursework (Spring 2026): Machine Elements I, Kinematics & Mechanical Design, and Thermodynamics
Honors: University Honors Program

Technical Skills

CAD: SolidWorks, Inventor, AutoCAD, Onshape

Programming & Hardware: Arduino, MATLAB, Simulink, C, C++

Engineering Projects

Bicycle-Mounted Snow Plow, Personal Project, Columbus, OH

Dec. 2025 – Present

- Designed and modeled a bicycle snow plow for sidewalks (24-in width) in SolidWorks, creating 20+ custom components in an 100+ mate assembly; refined from prior prototype into fabrication-ready final design.
- Performed static FEA in SolidWorks Simulation to analyze stress and impact under distributed snow loads; validated hand calculations, spring sizing, and structural geometry.
- Engineered a spring-loaded rotating trip edge to handle up to 3-in bumps, selecting spring stiffness and materials (UHMW plow face, rubber edge) to protect the frame.
- Developed a modular cross-member/boom structure allowing plow roll to maintain flush ground contact while minimizing transmitted loads; fabrication and testing planned Spring Break 2026.

Robot Project, The Ohio State University, Columbus, OH

January - May 2025

- Led the mechanical development of an autonomous robot for an honors engineering course, coordinating design and building tasks across team roles.
- Designed and built a reliable forklift-style lifting mechanism in Onshape and refined it through iterative testing to ensure smooth, consistent operation during course evaluations.
- Assisted with C coding to implement robot functions, including movement, sensors, and automation.

Machining Project, The Ohio State University, Columbus, OH

August - October 2025

- Machined a bronze piston to a ± 0.001 in tolerance using lathe operations (facing, turning, parting).
- Milled an aluminum cylinder block, connecting rod, and end cap on a Bridgeport mill using fly-cutting, end-milling, counterboring, reaming, and tapping.
- Produced a cylinder assembly integrated into a 6-cylinder compressed-air engine and programmed C++ engine control.

Activities & Leadership

Member, Buckeye Solar Racing, Columbus, OH

August 2025 – Present

- Fabricating precision tooling boards and carbon fiber components for a solar-powered race car, interpreting CAD drawings to cut, machine, and assemble molds to tight dimensional tolerances.
- Performing epoxy layups and composite fabrication processes, coordinating with manufacturing and design teams to deliver CAM-ready tooling and high-quality carbon fiber parts.

Member, Engineering Without Borders, Columbus, OH

Sept. 2025 - Present

- Designing and analyzing a gravity-fed and pump-assisted irrigation system spanning 800+ ft of hose, calculating pressure losses and flow performance to evaluate tank elevation versus pump integration.
- Researched Columbus zoning and height regulations to evaluate the feasibility of raising water storage tanks and ensuring the final design aligns with local requirements.

Work Experience

Service Worker, City of Mason, Mason, OH

May 2025 - August 2025

- Operated and maintained key Public Works equipment, including dump trucks, front-end loaders, work trucks, brush chippers, and commercial mowers, supporting daily streets and grounds operations.
- Collaborated with rotating crews and adapted to shifting assignments, completing roadwork, landscaping, and facility maintenance tasks efficiently and to city standards.