

Ethan Cogdill

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Professional Summary:

Product Engineer with a proven track record of executing complex projects from initial concept through production delivery. Leverages first-principles engineering and root-cause analysis to solve critical manufacturing challenges in high-precision fluid systems. Seeking to bring a strong work ethic and cross-functional leadership to the aerospace sector.

Education:

Case Western Reserve University

Bachelor of Science, Double Major in Aerospace and Mechanical Engineering

GPA: 3.90

Cleveland, OH

May 2025

Skills:

CAD/Analysis: SolidWorks, Ansys, DFMA, GD&T, DoE, FMEA

Manufacturing: Tooling/Fixture Design, Manual Machining, SPC, 8D / 5 Why

Software/Systems: SAP, Windchill, Power BI, MATLAB

Work Experience:

Product Engineer, Swagelok

August 2025 - Present

- Translated complex customer performance requirements into production-ready engineering designs and SAP MBOMs across high-volume industrial valve products.
- Led creation of product quality plans and implementation of GD&T to increase product health.
- Resolved shop floor fit/form/function defects across 4 major product lines utilizing FMEA, reducing scrap rates and upholding quality standards.
- Designed and executed testing protocols for elastomer compound supply chain changes to validate performance under harsh operating conditions.
- Delivered 1,300 hour annual labor time reduction through process validation of machine platform move.
- Achieved 65% improvement of yield-at-test of valve configuration through retaining component redesign.
- Led cross-functional root-cause investigations for engineering corrective actions, executed rigorous testing protocols to validate permanent technical solutions to prevent recurrence.

Student Technician, Sears think[box]

August 2023 - May 2025

- Led user training classes on university makerspace equipment including 3D printers, CNC router, waterjet, and metal lathe and mill.
- Conducted design consults with users regarding rapid prototyping for design and fabrication of personal and club projects.
- Performed advanced equipment maintenance and troubleshooting on CNC machines, welders, metal mills/lathes, waterjet cutter.

Project Engineering Intern, Swagelok

May 2024 - August 2024

- Led team in design and implementation of Power BI dashboard to track usage and capacity of electrical infrastructure, air compressors, and process chillers across 25 facilities to streamline the capital acquisition process.

Manufacturing Engineering Intern, Swagelok

May 2023 - August 2023

- Led feasibility study of a saw blade regrind program to reduce tooling cost by 50%, including FMEA and blade life cycle tracking.
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Projects:

Driving Simulator Force Feedback Pedal Design & Fabrication:

Nov 2024 - Apr 2025

- Led mechanical design and fabrication of low cost force feedback brake pedal to simulate high-performance racing brake dynamics.
- Developed first principles engineering model for pedal kinematics and dynamics to size stepper motor and lead screw pitch.
- Managed manufacturing schedule and hands-on production across a 4-engineer team at CWRU think[box], utilizing waterjet cutting for roughing and manual mills/lathes for high-precision finishing of critical aluminum structural linkages.

Aerospace Engineering Capstone, Systems Engineer:

Jan 2025 - May 2025

- Led team of 14 senior engineering students in ground-up conceptual technical design of nuclear propulsion transfer vehicle for crewed mission to moon of Mars, Deimos.
- Translated mission success requirements into derived and cascaded requirements while overseeing Propulsion, Thermal, Structures sub-teams, managed trade study development to meet mission requirements.
- Developed iterative MATLAB script to design an isogrid crew habitat structure to minimize mass and maximize strength.

