

Shelby Miller

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EDUCATION

University of Cincinnati | *Cincinnati, OH*
B.S. in Mechanical Engineering | Minor in Materials Engineering
Dean's List Recipient 6x

Graduating April 2027
GPA 3.9

ENGINEERING EXPERIENCE

Cleveland-Cliffs Inc. | *Finishing Process Research Co-op* January 2026 – Present

- Implementing a new hot strip mill process prediction model incorporating mechanical properties, temperature profiles, mill loading, flow stress, etc. for custom steel chemistries
- Debugging process model by building and validating virtual mill configurations across multiple plant facilities using drawings and production data
- Compiling process model errors and presenting its performance to software developers for continuous improvement, improving resulting data by over 80% from previous versions after my suggestions
- Analyzing steel surface quality using “glitter box” imaging techniques to detect micro-flaps and distinguish surface defects through several rounds of stereoscopy and high-resolution SEM imaging

Cleveland-Cliffs Inc. | *Hot Strip Mill Mechanical Engineering Co-op* May 2025 – August 2025

- Designed critical lubrication pipe systems for 6 hot strip mill stands using AutoCAD, ensuring proper flow under variable screw-down gear loading, improving product quality
- Led daily inspections of 366 motor and coupling setups, identifying mechanical issues to prevent unplanned downtime and equipment failures
- Monitored motor amperages and temperature of mill's valve stands daily, reporting faulty motors and temperature spikes to ensure smooth production

Cincinnati Test Systems, Inc. | *R&D Engineering Co-op* January 2024 – December 2024

- Modeled and fabricated next-generation leak testing instruments using SOLIDWORKS and additive manufacturing (FDM and SLA)
- Drafted AutoCAD 2D electrical schematics and pneumatic diagrams depicting pressure decay and mass flow actuation sequences for the applications lab to evaluate and provide data
- Led daily applications lab testing, executing structured test plans, collecting data, and validating product performance

LEADERSHIP AND INVOLVEMENT

BattleBots Robot | *UC Combat Robotics Club* | *University of Cincinnati* August 2022 – May 2023

- Collaborated on the design and fabrication of a 3lb combat robot using Autodesk Fusion360 and FEA to optimize structural integrity and weight distribution
- Independently designed the weapon system and power transmission assembly used in the final competition

HONORS AND AWARDS

- **Allan M. Smillie Scholarship Recipient** | Association of Iron and Steel Technology (AIST)'s Ohio Valley Member Chapter
- **Ohio Operating Engineers Scholarship Recipient** | Local 18 Scholarship Recipient 3x
- **Cincinnati Century Scholar**

SKILLS

- ✓ Microsoft Office/Excel, MATLAB, Python, SOLIDWORKS, AutoCAD, Siemens NX, FDM and SLA 3D printing, CFD, FEA