

Education

University of Kentucky <i>B.S. Materials Engineering, Process Engineering Focus, Junior, 3.93 GPA, Material Advantage, MS&T 2026, E-Day</i>	Jan. 2025 – May 2028 Lexington, KY
Midway University <i>Undergraduate Coursework in Computer Science (Transferred), 4.00 GPA, Esports Team</i>	Aug. 2023 – Jan. 2025 Midway, KY
True Lean (University of Kentucky) <i>Certification, Lean Systems Program</i>	May 2026 Lexington, KY

Experience

Engi-Mat Materials & Process Engineer Intern - Designing and implementing a solution reactor system with senior chemist to double manufacturing capacity and increase reliability. - Designing and implementing manufacturing equipment improvements to diversify products (circuits, hardware-software integration). - Performing root cause analysis for analytical and manufacturing equipment, both hardware and software issues. - Minimizing energy cost and consumption by performing an internal energy audit to identify equipment and process improvements.	Lexington, KY Jul. 2026 – Present
Materials Engineer Intern - Engineered, implemented, and documented an electrical control circuit for a motor-operated manufacturing system using a VFD, DAQ I/O, 3-phase motor, thermocouples, MFCs, and pressure transducers. - Designed, programmed, and deployed an embedded microcontroller to monitor and handle gas flow for an industrial furnace. - Optimized an image analysis script using Fiji to produce a particle size distribution in Excel from SEM images. Automated cross-sample and cross-project nanoparticle attribute comparisons.	Jul. 2025 – Jul. 2026
Chemical Technician Intern - Analyzed 30+ nanoparticle samples meeting size, moisture, and purity specifications each month using BET, XRD, and XRF. - Designed standard operating procedures (SOPs) to maintain and operate a carbon determinator and hydrogen determinator. - Controlled product phases by determining treatment step changes to meet customer quality specifications. - Trained 3 new team members on 7 chemistry technician SOPs.	May 2025 – Jul. 2025
University of Cincinnati Undergraduate Researcher – REALIZE REU - Controlled grain geometry and phases of FeNi₃P; contributed to industrial-scale manufacturing methods for rare-earth-free permanent magnets. - Designed sample treatment methods which disproved the feasibility of reducing grain size in the Fe₅₀Ni_{0.5}P system through static recrystallization. - Cast buttons in an arc melter, encapsulated them in glass, passed them through high-temperature furnaces, hot compressed the samples or cold rolled them, and analyzed their microstructure with SEM/EBSD. - Communicated scientific literature contributions by presenting at the Ohio-Region ChemE Undergraduate Research Day and MS&T 2026 Student Speaking Competition. Made broader impacts through a podcast episode for non-technical audiences.	Cincinnati, OH May 2026 – Jul. 2026
Midway University Tutor Tutored mathematics in calculus, statistics, linear algebra, and physics. Tutored computer programming in C# and Python.	Midway, KY Aug. 2024 – Dec. 2024

Projects

Battery Anode Calendering Simulation/Optimization ANSYS, Autodesk Inventor, Scikit-learn - Simulating stress distribution, porosity, and plastic deformation in composite anodes. - Implementing statistical process control relating roller parameters to post-calendering properties via a Scikit-learn regression model.	Active Personal Project
Steel Metallography and Mechanical Characterization Lab Series Optical Microscopy, Failure Analysis, Mechanical Testing - Performed post-cold-rolling microstructure analysis on 1018 steel to statistically relate rolling parameters with material properties. - Fabricated samples, determined failure modes, and analyzed crystal structure defects.	Academic
Onshape and MATLAB Electromechanical Design Project Onshape (CAD), MATLAB, Stepper/Servo Actuation - Designed, fabricated, and programmed a mechatronic system relating physical states, electronic states, and servo/motor actions. - Engineered and programmed the system translating stepper motor rotation to crane arm rotation via gears and shafts.	Academic

Technical Skills

Hardware & Automation: DAQ I/O, PLCs, VFDs, Arduino, Chemical Reactors, Pumps, Pressure Transducers, Process Instrumentation, SCADA
Software & Simulation: ANSYS (FEA), Thermo-Calc, Autodesk Inventor, Onshape, Python, NumPy, Scikit-learn, C++, MATLAB, SQL, Git, ImageJ, Linux, Windows, Excel
Process & Quality: Root Cause Analysis (RCA), Statistical Process Control (SPC), Design of Experiments (DOE), Geometric Dimensioning and Tolerancing (GD&T), Lean Systems, Energy Auditing
Lab & Characterization: Metallurgy, Ceramics Processing, Polymers, Heat Treatment / Sintering, Hot Compression, Metallography, SEM, EBSD, XRD, XRF, BET, Tensile & Hardness Testing