

Jacob Poore

East Providence, RI | [linkedin.com/in/jacobtpoore/](https://www.linkedin.com/in/jacobtpoore/) | jpooore.dev

EDUCATION

Wesleyan University

Bachelor of Arts

Majors: Physics and Integrated Design Engineering | **Minor:** Data Analysis

Relevant Courses:

- Physics: Quantum Mechanics I, Nonlinear Dynamics & Chaos, Thermal & Statistical Physics, Electricity & Magnetism, Special Relativity, Contemporary Physics, Electronics Laboratory, Experimental Optics
- Engineering: Introduction to Mechanical Design and Engineering, Metal Manufacturing, Design for Scale: Mass Manufacturing, Architecture I, Interdisciplinary Project Lab
- Data: Introduction to Programming, Working with MATLAB, Computer Science I, Applied Data Analysis, Generative AI & LLM Tools for Data Analysis

East Providence Career and Technical Center

ASE Automotive Technology Certificate

Certifications: ASE Entry-Level A1-A8 areas, EPA 609 License

Middletown, CT

September 2023 – May 2027

East Providence, RI

June 2023

RESEARCH EXPERIENCE

Metal-Additive Manufacturing - Chang-Davidson Lab

Undergraduate Research Assistant

Middletown, CT

January 2026 – Present

- Develop and experimentally validate robotic Cold Metal Transfer Wire Arc Additive Manufacturing (CMT-WAAM) workflows on ABB industrial welding systems using RAPID, investigating the effects of deposition parameters, material selection, and toolpath strategy on geometric accuracy, bead morphology, and overall build quality.
- Designed and implemented WAAM-Work, a Python-based research platform that converts a sliced three-dimensional geometry into raster, Archimedean spiral, and contour deposition paths and exports executable ABB RAPID programs.

FELLOWSHIPS & AWARDS

College Of Integrative Sciences Research in Science Fellowship

Wesleyan University

Middletown, CT

June 2026 – July 2026

- Selected for a competitive \$5,000 CIS Research in Science Fellowship to conduct independent research in robotic wire arc additive manufacturing through the Chang-Davidson Lab.

PRESENTATIONS

Poster Presentations

- Poore, J.,** and E. Chang-Davidson. "Can a Robot Color Inside the Lines? Continuous Toolpath Planning and Geometric Validation for CMT-WAAM" Poster presented at the Wesleyan University Summer Science Symposium, Middletown, CT, July 24, 2026; won third place in the Captivate Prize.
- Poore, J.,** and E. Chang-Davidson. "Toolpath-Aware Planning and Analysis in Wire Arc Additive Manufacturing." Poster presented at the LSAAT 2026 Action Team Event, Large Scale Additive Technologies Session, Worcester, MA, June 11, 2026.

PROFESSIONAL EXPERIENCE

Wesleyan University - Physics Department

Physics Lab Technician

Middletown, CT

September 2025 – May 2026

- Configured, and calibrated undergraduate laboratory apparatus, including photogates, motion carts, force sensors, air tracks, oscilloscopes, multimeters, and function generators, to support accurate and reproducible experimentation.

- Developed standardized setup and calibration procedures that reduce systematic error and improve consistency across faculty-led laboratory exercises and demonstrations.

Physics Laboratory Course Assistant

September 2025 – December 2025

- Independently instructed students through hands-on physics experiments, guiding data collection and experimental design through instrumentation, uncertainty analysis, and interpretation in laboratory investigations of Newtonian mechanics and electromagnetism.

City of East Providence

East Providence, RI

Junior Planner

June 2025 – September 2025

- Reviewed residential and commercial site plans using AutoCAD and ArcGIS, improving compliance with engineering standards and coordinated corrections with engineers and developers.
- Created data visualizations and technical reports to support infrastructure planning decisions across city departments

Pep Boys

North Providence, RI

Advanced Automotive Technician

June 2023 – August 2024

- Performed advanced diagnostics and repairs on mechanical, HVAC, suspension, and electrical systems using precision tools and diagnostic equipment.
- Selected for an advanced role immediately following program graduation, demonstrating high technical aptitude.

PROJECTS

WAAM-Work (In Development)

Middletown, CT

Python Application

January 2026 – Present

- Architected a Python-based toolpath-planning and robot-code generation platform for robotic wire-arc additive manufacturing, integrating model slicing, deposition-path generation, visualization, validation, and ABB RAPID export.
- Implemented raster, Archimedean spiral, and contour planning methods with configurable bead spacing, layer geometry, path ordering, point-density controls, and deposition-aware handling of narrow or overlapping regions.
- Designed an export pipeline that preserves process transitions, reduces unnecessary robot targets, and partitions large builds into independently testable RAPID modules to preserve memory for system controllers.
- Planning extensions for scan-based geometric comparison, deposition simulation, thermal modeling, collision checking, and closed-loop toolpath correction.

Portfolio

jpoore.dev

- Small or exploratory projects (e.g. CAD models, course projects) live on my website

LEADERSHIP & ACTIVITIES

WesEngineering

Middletown, CT

Mechanical Engineering Team

February 2026 – Present

- Designing a modular aerodynamic go-kart fairing and evaluating aerodynamic performance through SimScale simulations.

Wesleyan University Varsity Wrestling

Middletown, CT

NCAA Division III Student Athlete

September 2023 – Present

- Over twenty hours per week for team practices, lifting sessions, and competitions; balanced with rigorous coursework.

SKILLS

Programming: Python, MATLAB, C/C++, JavaScript, R (programming language), RAPID

Packages: NumPy, Matplotlib, Plotly

Engineering Software: SolidWorks, AutoCAD, ABB Robot Studio, Rhino 3D, SimScale, ArcGIS Pro, Blender

Technical skills: Microsoft Products, Adobe Products, Git/GitHub, Docker, GD&T

Manufacturing: Robotic Systems, 3D-Printing, CNC Machining, Laser Cutting, Injection Modeling, Thermoforming

Languages: English (native), Spanish (working proficiency)