

Julia L. Langlois

Mechanical Engineering Student | Manufacturing and Validation

FULL-TIME AVAILABILITY: SUMMER 2027

(914) 712-5396 | julia.langlois@alumni.psu.edu

Portfolio: julia-langlois-engineering.maplellama21.chatgpt.site

EDUCATION

Pennsylvania State University | B.S. Mechanical Engineering | Expected May 2027

GPA: 3.97 | Dean's List every semester | ASME Officer | Tau Beta Pi

Current coursework: Engineering for Manufacturing, Additive Manufacturing Lab, Machine Design, Applied CFD

B.S. Wildlife & Fisheries Science, 2023 | GPA: 3.96 | Magna cum laude

FUNCTIONAL EXPERIENCE

Manufacturing Process Development

- Evaluated two supplied propeller casting designs in SOLIDCast using density and solidification-time results; quantified a 24% decrease in maximum simulated solidification time (8.86 to 6.69 min), identified persistent hub porosity, and recommended riser changes or local chills. *Course project, Fall 2026.*

Mechanical Design and Assembly

- Calculated required torque and gear ratio for a 3 V competition winch and contributed to team CAD, supporting fabrication of a prototype with 3D-printed gearbox components; performance testing is pending. *Nittany Lion Lift, Fall 2026.*
- Developed a safety-bracket concept in SolidWorks by measuring couplings and rotating-adapter hardware and translating those dimensions into CAD geometry. *Ameridrives, Summer 2019.*
- Created SolidWorks models of industrial coupling hardware by interpreting existing engineering drawings and reproducing the specified geometry under engineering guidance. *Ameridrives, Summer 2019.*

Validation and Controls Documentation

- Validated 1,000+ BAS alarm and trend points by cross-checking control drawings, submittals, and equipment cut sheets; resolved inconsistencies and documented sensor ranges for customer setpoint review. *Siemens, Summer 2026.*
- Developed BAS power plans by calculating VA loads and assigning equipment to circuits from controls and MEP documentation; coordinated installation feasibility with electricians. *Siemens, Summer 2026.*

Process Improvement and Technical Execution

- Cut reporting processing time 50% across operations spanning 70+ survey sites by building an automated workflow in Power Automate and R; prevented data loss and helped keep the project under budget. *AECOM, 2023-present.*

PROFESSIONAL HISTORY

Siemens | Project Management Intern, Building Automation Systems | May-August 2026 | New York, NY

AECOM | Scientist | July 2023-present | New York, NY

Full-time through July 2025; part-time thereafter

Ameridrives International | Mechanical Engineering Intern | May-August 2019 | Erie, PA

TECHNICAL SKILLS

CAD and analysis: SolidWorks, Autodesk Inventor, SOLIDCast, ANSYS Fluent, MATLAB

Manufacturing and validation: FDM 3D printing, Cura, tolerancing concepts, calipers, controls drawings, P&IDs

Data and documentation: R, Excel, Power Automate, Bluebeam Revu