

Alvaro Chukwuebuka Anaenugwu
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Education

Michigan State University, East Lansing, MI.

Bachelor of Science, Mechanical Engineering, GPA: 3.3 – *December 2025*

Experience

Agronox, *Lead Systems Engineer* | *March 2025–Present*

- Designing an off-grid greenhouse system with geothermal ventilation and drip irrigation; applying HVAC and energy systems principles to agricultural design while leading a cross-functional team of 3 through design development, prototype planning, and preparation for field implementation.
- Developed a rice parboiler with closed-loop steam recycling, reducing energy usage by **25%** and improving process efficiency for smallholder farmers in Southeast Nigeria.

First Solar Inc., *Engineering Development Intern* | *Jan 2024 – Aug 2024*

- Collaborated with R&D, QA, and manufacturing teams to build and test 10+ S6 prototype modules weekly, delivering hands-on validation and contributing feedback in team performance reviews.
- **Led a solo research project** to optimize solar panel efficiency by investigating alternatives to anti-reflective coatings; analyzed glass reflectivity and silicon wafer stress using **spectrophotometry, JMP, and Excel**, contributing insights toward enhanced PV module performance and durability.

SmithGroup & MSU IPF, *Mechanical Systems Intern / Assistant Engineer* | *2022–Present*

- Supported HVAC and plumbing design for **25+ buildings**, including labs, museums, and campus renovations, across all design phases (SD–CD); performed load calcs, equipment sizing, duct/piping layouts using **Revit, AutoCAD, IESVE**, and **Pollination**.
- Collaborated on MEP coordination, energy modeling, and submittal reviews, applying **ASHRAE standards** and sustainability targets for **hydronic/chilled water systems, domestic water, and sanitary drainage** in complex commercial and institutional buildings.

Technical Skills

REVIT, IESVE, AutoCAD, Trane Trace 3D, Microsoft 365 Suite, NX, Fusion 360, JMP, Solidworks