**ABRAAO DA SILVA**

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**WORK EXPERIENCE**

**JACKSON HEDDEN INC.** Birmingham, AL

Junior Industrial Design Engineer July 2025 – Present

* Lead full product development (under NDA), including CAD modeling, GD&T, and design-for-manufacturing documentation, managing over 15 clients.
* Perform engineering calculations, component selection, and feasibility studies; develop and troubleshoot embedded systems and PCB prototypes and 3D printed functional prototypes.
* Coordinate with international manufacturers on sourcing, quoting, and production readiness; deliver client presentations and technical documentation.
* Contribute across mechanical, electrical, and industrial design disciplines to prototype, test, and validate consumer products.

**SCHNEIDER ELECTRIC | SQUARE D** Lexington, KY

Manufacturing Engineer Intern May 2024 – Aug 2024

* Developed **3 standardized Statement of Work** (SOW) for Load Centers interior line, by doing Gemba walks in other Assembly lines and documenting key assembly steps with notes and photos
* Managed product data for **3 Load Centers’ interior catalogs**, ensuring accurate documentation, and facilitating the transition to a new assembly line, using SAP (PDM) and Windchill (PLM)

**CUMMINS**  Seymour, IN

Test Facilities Engineer Intern May 2023 – Aug 2023

* Updated and redesigned **50+ Preventive Maintenance (PM) Job Plans** and created new PM assets across **5 engine test cells**, improving accuracy and alignment with plant-wide PM scheduling
* **Reverse engineered legacy 30L engine rollover mounts** by taking precise measurements, modeling parts in **PTC Creo**, producing technical drawings, and working with suppliers to quote, approve, and deliver machined components for on-site installation
* Realigned a **12-month dyno maintenance cycle** to match updated job plans and availability windows, helping reduce scheduling conflicts and test cell downtime

**PROJECTS**

[**ROBOTIC ASSISTANT**](https://www.abraaodasilva.com/portfolio/capstone-project-robotic-assistant-crab) Jan 2025 Apr 2025

* Designed and built a teleoperated robotic crab with dual 3-DOF arms, mecanum wheels, and FPV video feedback for hazardous environments; **achieved 100m control and 350g payload with 50+ min runtime. Awarded** “**Best Capstone Project - Spring 2025**”

**INJECTION MOLDING/CNC PROJECT** Aug 2024 Jan 2024

* Designed and CNC-machined an aluminum mold for an injection-molded NCC coin; used SolidWorks Plastics to reduce sink marks and optimize fill pressure (4.77 MPa) and fill time (1.1 s)

**SKILLS & ACTIVITIES**

* **CAD** – SolidWorks, PTC Creo, Onshape; Autodesk Fusion 360, assemblies, DFMA, and technical drawings, BOM, GD&T
* **Simulation & Analysis** - SolidWorks Plastics, FEA, MATLAB (kinematics, torque, dynamic analysis), EasyEDA PCB Electrical Development
* **Manufacturing Tools** - CAM(CNC toolpaths), SAP, Windchill PLM, 5S, Standard Work, Lean Manufacturing, Gantt charts
* **Programming & Systems** - Arduino, Python, MATLAB, HTML/CSS/JavaScript, microcontroller integration
* **Leadership** - Co-Founder & Secretary (2022 – 2025), NCC for Africa | Secretary, SHPE (2022- 2023)

**EDUCATION**

**NORTH CENTRAL COLLEGE** Naperville, IL

Bachelor of Science in **Mechanical Engineering** Aug 2021 – May 2025

**Cumulative GPA**: 3.55/4.0; Dean’s List 2021-2025 | **Cum Laude**

**Awards:** Best Capstone Project (SP25), Best Robotics Project (FA24), “Program of the Year” (2022–2023), International Trustee Scholarship (prestigious merit-based full-ride)

**Honors:** Tri-Alpha, Pi Mu Epsilon