Nico Miller

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SUMMARY

Mechanical engineering student (B.S. May 2027, 3.60 GPA; FE Exam in progress) with hands-on experience in composite materials, precision mechanical design, thermal/CFD analysis, FEA, and hardware prototyping and validation. Multi-platform CAD fluency across SolidWorks, CATIA, Fusion 360, and Autodesk Inventor. Comfortable working across the hardware/software boundary (C, Python, JavaScript). Seeking a full-time Mechanical/Hardware Engineering role.

EDUCATION

Mississippi State University — Starkville, MS
B.S. in Mechanical Engineering, Minor in Mathematics | GPA: 3.60 / 4.00 — *Graduating May 2027*

ENGINEERING EXPERIENCE

Advanced Composites Institute — Starkville, MS
Composite Materials Researcher — *Jan 2025 – Present*

- Manufacture and test carbon-fiber and other composite products to tight dimensional and performance specs for private companies and university departments
- Perform mechanical material testing to ASTM and customer specifications, documenting tensile/flexural data
- Conduct PFMEA to identify and mitigate manufacturing defects before they reach a customer
- Develop precision 3D CAD models and tooling in SolidWorks to support consistent, repeatable part manufacturing

Hytrol Conveyor Company — Jonesboro, AR
Research & Development Engineering Intern — *May 2026 – July 2026*

- Designed a modular transfer conveyor in Inventor CAD
- Engineered a universally compatible, modular transfer mechanism, successfully integrating the design across the entire Hytrol conveyor product line
- Streamlined the product catalog by standardizing the transfer subsystem, significantly reducing manufacturing and design complexity
- Led the end-to-end R&D of the new mechanism, applying core hardware and mechanical design principles to eliminate the need for custom, one-off conveyor parts

Formula SAE at Mississippi State — Starkville, MS
Aerodynamics / Powertrain Team Member — *Jan 2024 – Jan 2026*

- Designed and CFD-validated carbon-fiber aerodynamic components (aerofoils) in SimScale, reducing drag by 12%
- Designed precision mechanical assemblies and enclosures in SolidWorks with GD&T-driven tolerancing
- Built and tuned an engine dynamometer with my team to measure and validate powertrain performance
- Collaborated on a multidisciplinary team under hard competition deadlines to ship a working vehicle each year

CAVS-E Industrial Engineering Firm — Canton, MS
Engineering Intern — *May 2025 – Aug 2025*

- Modeled and simulated vehicular-system components in SolidWorks with FEA, validating designs against performance and reliability targets before physical build
- Improved manufacturing processes for 5 Mississippi manufacturers as an industrial-engineering contractor, reducing cost, cycle times, and waste
- Analyzed experimental test data to identify design and process improvements, informing changes that improved system reliability

ADDITIONAL EXPERIENCE

Ferguson Street Supermarket — Nassau, The Bahamas
Part-Time Systems Administrator — *Jun 2020 – Jun 2023*

- Implemented a point-of-sale system that increased checkout productivity by 30%; processed up to 250 sales/day and managed bulk inventory receiving

TECHNICAL SKILLS

CAD & Precision Design: SolidWorks (CSWA), CATIA, Fusion 360, Autodesk Inventor, GD&T, tolerance analysis, DFM, enclosure & mechanism design
Thermal & Simulation: Computational Fluid Dynamics, Finite Element Analysis (Ansys), thermal/airflow analysis
Hardware Prototyping & Test: CNC machining, composite manufacturing, ASTM material testing, PFMEA, hands-on validation testing, drone manufacturing
Programming: Python, C, JavaScript, SQL, HTML/CSS (Harvard CS50)
Other: Multi-rotor drone manufacturing & fixed-wing UAV flight control (Betaflight, expert); hardware design & assembly; Spanish (conversational)

CERTIFICATIONS

FE Exam (In Progress) • ACE Composites Certification • SolidWorks CSWA • PFMEA • CNC Machining • Harvard CS50 • Microsoft Excel