

Edward Fields

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Engineering Physics graduate (May 2026) from the University of Central Arkansas with hands-on experience in robotics, embedded systems, and electrical engineering. Led the electrical and software development of an autonomous ROS2-based robot, including circuit design, power distribution, bench testing, and full-stack software integration. Placed 3rd statewide and won Best Notebook at the 2026 ASGC (Arkansas Space Grant Consortium). Presented original work at the IEEE Student Showcase; Multiple years of professional work history demonstrating reliability and accountability.

EDUCATION

University of Central Arkansas — Conway, AR May 2026
Bachelor of Engineering Physics (Robotics & Software Automation) — GPA: 3.2 — Presidential Scholar — Dean's List
— Alpha Lambda Delta Honor Society

TECHNICAL SKILLS

Programming: Python, C++, ROS2 (Robot Operating System 2)(Jazzy), Jupyter Notebook
Electrical & Hardware: Schematic reading/creation, oscilloscopes, function generators, multimeters, soldering
Embedded Systems: Raspberry Pi 5, Raspberry Pi Pico 2, serial communication
Software & Tools: VS Code, GitHub, Linux (Ubuntu), Onshape (CAD)
Engineering Domains: Circuit analysis, control systems, signal processing, power systems, electrical systems design

ENGINEERING PROJECTS

Senior Design: Autonomous Color-Seeking Robot Aug 2025 – May 2026
Electrical & Software Lead — 3rd Place Statewide + Best Notebook — ASGC Competition, Petit Jean, AR

- Architected the full ROS2 Jazzy software stack, including Nav2 waypoint navigation, sensor fusion, and decision-making logic on a Raspberry Pi 5 running Ubuntu.
- Integrated an Intel RealSense D455 depth camera for real-time color detection, obstacle avoidance, and navigation.
- Designed the power distribution system: LiPo batteries with multi-rail buck converters supplying isolated power to compute, sensors, and drive systems.
- Created electrical schematics for the full system; used oscilloscopes and function generators to verify signal integrity, debug motor driver outputs, and validate sensor communication lines.
- Developed a differential drive controller in Python with closed-loop odometry on a Raspberry Pi Pico 2 communicating with the Pi 5 over serial.
- Diagnosed a motor stall caused by a wiring fault; redesigned circuit protection.

PROFESSIONAL DEVELOPMENT

- IEEE Student Showcase 2025 — Presented an autonomous robotics capstone to an IEEE panel; fielded technical questions on system design and testing from industry professionals.
- ASGC Collegiate Networking Events — Attended statewide events at the University of Arkansas (Jan 2026) and hosted at UCA (Feb 2026); connected with engineering students, faculty, and industry professionals.

WORK EXPERIENCE

Georg Fischer — R&D Intern July 2026 – Present

- Collecting and analyzing dimensional measurement data to support R&D processes and quality decisions.
- Conducting a study on manufactured pipes to characterize shrinkage and process behavior.

Walmart — Personal Shopper Conway, AR May 2022 – Present

- Maintained high accuracy and throughput in high-volume order fulfillment; promoted to lead responsibilities in day-to-day operations over 4+ years.
- Identified and implemented process improvements within the team, reducing errors and improving efficiency.

University of Central Arkansas — Student Worker, Career Services Oct 2023 – May 2024

- Coordinated logistics for campus career events; served as point of contact for students, faculty, and staff.