

Jalen Edusei

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EDUCATION

The University of Georgia, Morehead Honors College, Athens, GA
Bachelor of Science, Computer Systems Engineering

May 2026
GPA: 3.80

SKILLS

Programming: Assembly, C, C#, C++, HTML, Java, JavaFX, JavaScript, MATLAB, Python, R, SQL, Verilog

Software: Autodesk Fusion 360, Blender, CAD, Figma, Git, GitHub, Graphic Design, Microsoft Suite, NASA F Prime, Unity3D, Virtual & Mixed Reality Development, Website Development, Wix, WordPress, Xilinx, Zephyr

Hardware and Embedded Systems: 2U CubeSat, Basys2 FPGA Boards, Raspberry Pi Pico 2W, Raspberry Pi 4, Sensors, Signal Processing, STM32 Microcontrollers

Core Competencies: Business Case Development, Collaboration, Data Analysis, Critical Thinking, Human-Computer Interaction, Problem Solving, Product Strategy, Project Management, Strategic Leadership, Technical Communication

PROJECT EXPERIENCE

Virtual Reality Portfolio 2

Athens, GA

for Virtual Reality, CSCI 6830

October 2025 – present

- Develop two advanced XR experiences, a VR Mini Museum highlighting artistic storytelling and an MR Instrument Room simulating real-world object interaction through hand tracking and passthrough visualization.
- Apply Unity's Universal Render Pipelines (URP), OpenXR framework, and Meta XR SDK to create physics-driven, hand-tracked interactions and persistent spatial anchors across more than 20 custom-built C# scripts.
- Implement mixed reality concepts such as depth-based occlusion, real-time sound mapping, and PBR material design, achieving lifelike reflections, accurate haptic timing, and stable performance on the Meta Quest 3.

Animal Dot – Smart Contactless Animal Bed

Athens, GA

for Capstone Design, CSEE 4910

August 2025 – present

- Design a non-invasive smart sensing bed to monitor animal heart rate and respiration using geophone vibration detection.
- Integrate modular hardware with load cells and temperature sensors for extended health monitoring applications.
- Develop an embedded system for real-time signal acquisition and display, with bench testing and veterinary-supervised demonstrations planned.

Smart Plant Watering Assistant

Athens, GA

for Sensors and Transducers, ELEE 4230

August 2025 – present

- Build an automated plant monitoring system using a Raspberry Pi Pico 2W connected to a soil moisture sensor, thermistor, and LDR to analyze environmental conditions in real time.
- Integrate analog signal conditioning, operational amplifier stages, and Kalman filtering to stabilize noisy sensor data and enhance measurement precision.
- Implement control logic for a transistor-driven water pump with predictive thresholding to maintain optimal soil moisture, demonstrating reliable closed-loop system performance.

Stress Management Micro-Moments Application

Athens, GA

for Human-Computer Interaction, CSCI 4800

August 2025 – present

- Explore how computing can facilitate brief, restorative stress management moments by studying user behaviors, workplace constraints, and emotional triggers through interviews and contextual inquiry.
- Apply human-centered design methods to translate insights into low-effort, adaptive prototypes that leverage feedback loops, ambient cues, and personalization to support everyday well-being.
- Evaluate multiple interactive concepts such as BreakBuddy and RestPod through usability testing and experience-based assumption mapping, refining their flow, accessibility, and stress reduction effectiveness.

Virtual Reality Portfolio 1

Athens, GA

for Virtual Reality, CSCI 6830

August 2025 – October 2025

- Constructed a four-part Unity portfolio demonstrating key VR design principles including transformation, physics-based motion, immersion, and user interaction with spatial environments.
- Authored over 15 C# scripts integrating real-time lighting, spatial audio, collision detection, and smooth locomotion, translating theoretical VR concepts into practical, interactive learning modules.
- Explored the relationship between sensory cues and user perception by experimenting with movement scaling, timed feedback, and interactive triggers, resulting in scenes that sustained user focus 40% longer during testing.

Audio Tracking Car

Athens, GA

for ECSE Design Methodology, ECSE 2920

January 2025 – April 2025

- Engineered a Python-based control system on Raspberry Pi 4 that autonomously navigated towards specific audio frequencies, improving tracking precision by 20%.
- Developed a PID motor control algorithm utilizing optical encoder feedback and ADC signal processing, enhancing motor response time by 15%.
- Directed GitHub codebase with 200+ commits and launched a Wix user manual site accessed by 50+ users, elevating project usability and collaboration.

LED Frequency Filter

Athens, GA

for Linear Systems, ELEE 6210

August 2024 – December 2024

- Designed a frequency filter circuit to classify signals into predefined bands and visualize them via LEDs, achieving 98% signal classification accuracy.
- Iterated hardware design through oscilloscope analysis and voltage optimization to minimize signal attenuation and distortion.
- Conducted rigorous validation with hardware testing, improving circuit reliability and response time by 10%.

Mission for Education and Multimedia Engagement Satellite (MEMESat-1) Flight Software

Athens, GA

for the Small Satellite Research Laboratory at the University of Georgia

March 2024 – December 2024

- Developed CubeSat flight software in C++ using NASA F Prime framework, optimizing embedded system performance on Raspberry Pi Compute Module 4.
- Achieved 90% line coverage and 60% branch coverage through comprehensive verification suite, ensuring software safety and mission reliability.
- Collaborated with cross-functional team to deploy custom Linux-based environment, streamlining satellite software integration.

Creation and Development of Websites

Athens, GA

for the Joyner Research Laboratory & for the National Society of Black Engineers

September 2022 – May 2024

- Spearheaded interactive WordPress and JavaScript website development, enhancing digital presence and increasing site traffic by 500+ monthly visitors.
- Coordinated with 10+ stakeholders to define requirements and apply UX principles, ensuring multi-device compatibility and seamless user experience.
- Implemented rigorous testing protocols, reducing bugs and downtime by 30%.

Travel Itinerary Application

Athens, GA

for Software Development, CSCI 1302

December 2023

- Created JavaFX-based GUI application integrating Google Places and other RESTful APIs for dynamic data loading on hotels, attractions, and restaurants.
- Engineered efficient background threading to enable smooth UI responsiveness during data retrieval, increasing user satisfaction.
- Delivered a visually appealing and highly organized application interface, improving usability scores by 25%.

RELEVANT EXPERIENCE

Capital One, Business Analyst Intern, McLean, VA

June 2025 – August 2025

- Spearheaded development of a business case for a Notifications Preferences Center for CreditWise, projected to streamline customer communication management for 60M+ users.
- Analyzed performance of CreditWise email campaigns, creating a valuation framework to quantify engagement and retention impact and propose a new email domain.
- Partnered with cross-functional teams to present actionable recommendations to senior leadership, driving alignment on future messaging strategy.
- Leveraged SQL, Python, Excel, and data visualization tools to evaluate KPIs, delivering insights that informed product roadmap decisions.

University of Georgia Housing, Resident Assistant, Athens, GA

August 2023 – May 2025

- Cultivated an inclusive community for 45 residents by organizing 10+ educational and social events each semester, boosting resident engagement by 30%.
- Mediated and resolved 30+ conflicts and safety concerns, maintaining a secure and supportive environment.
- Partnered with housing staff to implement programming focused on academic success and mental health awareness.

Joyner Research Laboratory, Research Assistant, Athens, GA

September 2022 – May 2023

- Designed and launched a new laboratory website, increasing research visibility and engagement by over 500 monthly

visitors.

- Conducted 50+ experiments including ELISAs and DNA/RNA extractions supporting malaria bioinformatics projects.
- Analyzed and documented data contributing to 2 peer-reviewed manuscripts.

Great American Cookies & Marble Slab Creamery, Shift Leader, Dallas, GA

May 2022 – July 2022

- Managed daily operations and supervised a team of 5 employees, increasing shift efficiency by 20%.
- Processed 100+ customer orders daily with exemplary service, achieving top customer satisfaction ratings.
- Trained new staff, improving onboarding time by 40%.

CAMPUS & COMMUNITY INVOLVEMENT

Vice President, National Society of Black Engineers

May 2025 – present

- Lead a 100+ member chapter in strategic planning, aligning operations with national initiatives and regional directives.
- Coordinate logistics for national and regional conventions, managing travel, accommodations, and registration for 50+ members.
- Design and implement a centralized digital resource hub, providing internship pipelines, alumni contacts, and project archives to boost member success.

Member, Tau Beta Pi Honor Society

October 2024 – present

- Selected for academic distinction, leadership, and commitment to ethical engineering practice.
- Participate in professional development forums and community service events promoting excellence in STEM education.
- Represent the university within the nation's oldest and most prestigious engineering honor society.

Brother, Theta Tau Fraternity, Iota Epsilon Chapter

January 2024 – present

- Co-organize technical workshops, speaker panels, and community outreach efforts enhancing professional growth for 120+ members.
- Foster fraternity values of brotherhood, service, and lifelong learning through active participation in chapter initiatives.
- Engage in leadership and skill development through national seminars and industry collaborations.

Student Advisor, Louis Stokes Alliance for Minority Participation

August 2023 – May 2025

- Planned and execute 8+ workshops each semester supporting academic success for 30+ underrepresented STEM students.
- Assisted in strategic programming and mentoring initiatives contributing to increased retention and engagement.
- Developed and maintained the organization's digital and social media strategy, increasing online engagement by 50%.

Senator, National Society of Black Engineers

May 2024 – May 2025

- Represented chapter at regional and national levels, voting on legislation and advocating for student-centered initiatives.
- Led conference interest meetings, managing all travel logistics and budget allocations in coordination with the Treasurer.
- Drafted and presented semester goals fostering alignment between chapter activities and national objectives.

ELS Peer Leader, Office of Engagement, Leadership, and Service

January 2024 – May 2024

- Selected for leadership coaching program supporting first- and second-year student engagement in UGA involvement pathways.
- Conducted 1:1 mentorship sessions, connecting students to leadership opportunities, clubs, and resources across campus.
- Facilitated interactive workshops that improved student understanding of values-based leadership and self-discovery.

Telecommunications & Vice Public Relations Chair, National Society of Black Engineers

May 2023 – May 2024

- Increased chapter social media engagement by 40% through data-driven content strategies and visual design.
- Designed and launched a new chapter website to streamline communication, centralize resources, and showcase events.
- Created branded promotional materials that boosted event attendance by 15% and enhanced chapter visibility.

STUDY ABROAD EXPERIENCE

Study Abroad in Germany

May 2023 – June 2023

- Completed coursework on engineering ethics, professionalism, and global collaboration, earning 3 credit hours.
- Delivered 3 technical presentations and authored 2 academic papers exploring case studies in ethical engineering practice.
- Traveled independently to Germany, France, and Austria, building intercultural fluency and adaptability.

HONORS AND AWARDS

Extraordinary Engineer

February 2024

- Recognized by the College of Engineering for leadership, academic excellence, and service to the engineering community.

Presidential Scholar (2x)

December 2022, May 2023

- Awarded for maintaining a 4.0 GPA during consecutive semesters of full-time coursework.

Dire Needs Project Fund: \$1500 Project Grant

August 2023 – May 2024

- Selected through a competitive process to receive funding for a student-led project addressing a pressing engineering challenge.