

# GERALD NKANSAH

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## PROFESSIONAL SUMMARY

Computer Engineering graduate with proven experience delivering full-stack applications, AI-driven systems, and FPGA-based hardware solutions. Adept at designing secure, high-performance software and hardware integrations that enhance user experiences and optimize efficiency. Excels in problem-solving, analytical thinking, and collaborative execution to tackle complex technical challenges. Ready to contribute immediately to software, embedded, or AI/automation projects with measurable impact.

## TECHNICAL SKILLS & COMPETENCIES

- Node.js
- API Development
- Oscilloscope Usage
- Analytical Thinking
- Frontend Development
- Interactive Web Design
- Full Stack Development
- CI/CD
- Vercel
- FPGA Design
- GitHub Actions
- Communication
- AWS EC2 / Beanstalk
- Digital System Design
- Docker
- React.js
- Adaptability
- Collaboration
- Microcontrollers
- Problem Solving
- Signal Processing (Matlab)

## PROFESSIONAL EXPERIENCE

**Dashboard Developer** **03/2025 – 05/2025**  
**RHT - Robert Half Technology** **Atlanta, GA**

- Designed and deployed an interactive dashboard using React.js and Node.js that automated numeric data classification and format transformations, streamlining user workflows and reducing manual processing time.
- Configured MongoDB for secure session management and data persistence, integrating JWT-based authentication to safeguard access and strengthen system reliability.
- Optimized the interface for mobile responsiveness with asynchronous processing and dynamic UI components, enhancing performance and improving overall user experience across devices.

**Software Engineer** **07/2024 – 12/2024**  
**Ebenezer Presby Church** **Woodbridge, VA**

- Developed an AI-powered computer vision system for real-time lane tracing and object detection, enabling structured crowd flow and reducing congestion during large gatherings.
- Integrated machine learning algorithms on low-resource platforms, optimizing accuracy and performance while minimizing hardware and power constraints.
- Implemented automated routing and monitoring features that enhanced attendee safety, improved event coordination, and supported seamless management of high-traffic processions.

**Front End Customer Service Associate** **06/2020 - Current**  
**Walmart** **Ashland, VA**

- Resolved and documented POS and self-checkout errors, applying systematic troubleshooting approaches relevant to technical problem-solving.
- Ensured transaction data integrity by carefully monitoring system responses, reinforcing accuracy and attention to detail in record-keeping.
- Self-checkout kiosks: Helping customers navigate the interface, fixing minor errors, and troubleshooting issues with the scale or item recognition.

## ACADEMIC & PERSONAL PROJECTS

**George Mason University | Function Generator — Op Amp Pro**

- Constructed a function generator circuit using operational amplifiers capable of producing sine, square, and triangular waveforms, applying analog design principles to replicate multiple signal types.
- Tested waveform accuracy with oscilloscopes and signal analysis tools, validating performance across frequency ranges and ensuring reliable functionality for academic and prototyping applications.

**George Mason University | Self-Aware Lane Tracking for Autonomous Systems**  
**Senior Design Project**

- Developed a lightweight AI system for real-time lane detection and autonomous navigation on resource-constrained platforms, leveraging Raspberry Pi prototypes to optimize processing efficiency.
- Implemented object detection and tracking algorithms to enhance lane-assistance accuracy, improving system reliability while minimizing computational and power requirements for low-end autonomous systems.

<b>Institute of Data   Digital Keypad Project</b>	<b>12/2024 –03/2025</b>
<b>Mini Project 1:</b> Developed a basic number conversion function that converts decimal numbers into binary, octal, and hexadecimal. <ul style="list-style-type: none"><li>Implemented conversion logic using JavaScript, tested a wide number ranges, and ensured accuracy for conversions.</li></ul>	
<b>Mini Project 2:</b> Built a simple UI for users to enter numbers and view their conversions dynamically. <ul style="list-style-type: none"><li>Incorporated a React-based frontend, added user input handling, and displayed the conversions in real time.</li></ul>	
<b>Institute of Data   Digital Keypad Capstone Project</b>	
<ul style="list-style-type: none"><li>Integrated all mini-project components into a fully functional Digital Keypad Converter App, implementing backend API connectivity and testing performance to ensure a seamless, reliable user experience.</li><li>Enhanced the application with token-based authentication and user-specific data storage, strengthening security and enabling personalized conversions while demonstrating end-to-end full-stack development capabilities.</li></ul>	

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## EDUCATION & CERTIFICATIONS

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<b>Certificate in Software Engineering</b>	<b>02/2025</b>
Institute of Data – Virginia Commonwealth University (Accredited) <ul style="list-style-type: none"><li><b>Key Focus:</b> Software Development Principles, API Development, Full Stack Development, Frontend &amp; Interactive Web Design, React.js 2:1   Head of School’s Commendation for Academic Performance</li></ul>	
<b>Bachelor of Science in Computer Engineering</b>	<b>05/2024</b>
George Mason University <ul style="list-style-type: none"><li><b>Relevant Coursework &amp; Technical Topics:</b> Embedded Systems, Microcontrollers, Digital System Design, Computer Architecture, Object-Oriented Programming, Data Structures, Operating Systems, Computer Networking, Continuous &amp; Discrete Signals, Python/Java/C/C++ Programming, Microprocessor Design, Signal Processing, Hardware Programming</li></ul>	

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## AWARDS & HONORS

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<ul style="list-style-type: none"><li><b>Dean’s List</b> – Recognized for academic excellence, Spring 2021 &amp; Spring 2024</li><li><b>YMCA Volunteer of the Month</b> – Honored for outstanding community service and leadership</li><li><b>Walmart Five-Year Excellent Service Award</b> – Acknowledged for consistent performance, reliability, and dedication</li></ul>	
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