

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

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|--|---|--|
| <ul style="list-style-type: none">• Node.js• API Development• Oscilloscope Usage• OO Design Principles and Patterns• Frontend Development• Interactive Web Design• Full Stack Development• Design/Development/Deployment of Microservices | <ul style="list-style-type: none">• CI/CD• Vercel• FPGA Design• GitHub Actions• AWS EC2 / Beanstalk• Digital System Design• AWS/ALB/IAM/Lambda• AWS DynamoDB, API Gateway• Python/Java/JavaScript/C/C++ | <ul style="list-style-type: none">• Docker• React.js• Microcontrollers• Signal Processing (Matlab)• Spring AI/Open AI/Amazon Bedrock• VHDL/Vivado |
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PROFESSIONAL EXPERIENCE

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|--|---|
| AI Engineering Fellow
AI Research Contributor Handshake AI — Project Lexicon | 12/2025 - Current |
| <ul style="list-style-type: none">• Selected for a large-scale AI research initiative focused on LLM evaluation and validation.• Performed data annotation, data quality assurance, and consistency checks to support model assessment.• Applied analytical and algorithmic reasoning to evaluate AI system behavior and edge cases. <p><i>Project is currently paused as part of standard program scheduling.</i></p> | |
| Financial Analyst I
AML RightSource | 12/2025 - Current |
| <ul style="list-style-type: none">• Perform large-scale data analysis to identify patterns, anomalies, and risk indicators in structured datasets.• Apply rule-based and logic-driven workflows to evaluate complex data scenarios.• Conduct data validation and quality checks to ensure accuracy and consistency across cases. | |
| Front End Customer Service Associate
Walmart | 06/2020 - Current
Ashland, VA |
| <ul style="list-style-type: none">• 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. | |
| Dashboard Developer
RHT - Robert Half Technology | 03/2025 - 05/2025
Atlanta, GA |
| <ul style="list-style-type: none">• 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
Ebenezer Presby Church | 07/2024 - 12/2024
Woodbridge, VA |
| <ul style="list-style-type: none">• 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.• Implemented automated routing and monitoring features that enhanced attendee safety, improved event coordination, and supported seamless management of high-traffic processions. | |

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.

Institute of Data | Digital Keypad Project

12/2024 - 03/2025

Mini Project 1:

Developed a basic number conversion function that converts decimal numbers into binary, octal, and hexadecimal.

- Implemented conversion logic using JavaScript, tested a wide number ranges, and ensured accuracy for conversions.

Mini Project 2:

Built a simple UI for users to enter numbers and view their conversions dynamically.

- Incorporated a React-based frontend, added user input handling, and displayed the conversions in real time.

Institute of Data | Digital Keypad Capstone Project

- 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.
- 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.

EDUCATION & CERTIFICATIONS

Skills Upgrade Program

Tubman Technologies Inc.

09/2025

- **Key focus:** Advanced training in Spring 5, Spring Boot 3.x, Spring Security (SAML, OAuth, JWT), Microservices & cloud-native: Spring Cloud + Netflix Eureka, Spring Cloud Streams, Messaging & streaming platforms: Apache Kafka (with Connectors & Streams), RabbitMQ, Generative AI development: Spring AI, OpenAI API, Ollama, Amazon Bedrock. Hands-on project work, mentorship, and client-focused delivery (as part of the training cohort).

Certificate in Software Engineering

02/2025

Institute of Data – Virginia Commonwealth University (Accredited)

- **Key Focus:** Software Development Principles, API Development, Full Stack Development, Frontend & Interactive Web Design, React.js 2:1 | Head of School's Commendation for Academic Performance.

Bachelor of Science in Computer Engineering

05/2024

George Mason University

- **Relevant Coursework & Technical Topics:** Embedded Systems, Microcontrollers, Digital System Design, Computer Architecture, Object-Oriented Programming, Data Structures, Operating Systems, Computer Networking, Continuous & Discrete Signals, Python/Java/C/C++ Programming, Microprocessor Design, Signal Processing, Hardware Programming.

AWARDS & HONORS

- **Dean's List** – Recognized for academic excellence, Spring 2021 & Spring 2024
- **YMCA Volunteer of the Month** – Honored for outstanding community service and leadership
- **Walmart Five-Year Excellent Service Award** – Acknowledged for consistent performance, reliability, and dedication