

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
- OO Design Principles and Patterns
- Frontend Development
- Interactive Web Design
- Full Stack Development
- Design/Development/Deployment of Microservices
- 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++
- Docker
- React.js
- Microcontrollers
- Signal Processing (Matlab)
- Spring AI/Open AI/Amazon Bedrock
- VHDL/Vivado

PROFESSIONAL EXPERIENCE

AI Engineering Fellow **12/2025 - Current**

AI Research Contributor Handshake AI — Project Lexicon

- 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.
- Project is currently paused as part of standard program scheduling.*

Financial Analyst I **12/2025 - Current**

AML RightSource

- 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 **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.

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.
- 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