

Iyetunde Winnifred Edwards

6245 S Champlain Ave, Chicago, Illinois | +1 (872) 303-0148 | Winnifrededward03@yahoo.com

PERSONAL SUMMARY

Results-driven Computer Engineering graduate from Northwestern University with over five years of progressive experience in embedded systems, software development, and systems integration. Proven ability to design scalable hardware-software solutions and lead cross-functional engineering teams. Passionate about emerging technologies and committed to delivering robust, efficient systems in fast-paced, innovation-driven environments.

EDUCATION

PhD, Human-Computer Interaction in Software Development

Drexel University, Philadelphia, Pennsylvania | March 2026

- Research focus: human-centered design methods and usability evaluation for developer-facing tools and software engineering workflows.
- Dissertation: Improving developer experience through HCI-informed design of software development environments.

MSc Software Engineering

Northwestern University, Chicago, Illinois | 2021 – 2023

BSc (Hons) Computer Engineering

Northwestern University, Chicago, Illinois | 2015 – 2019

Key Modules: Digital Systems Design, Embedded Systems, Computer Architecture, Signal Processing, Software Engineering, Microprocessors & Microcontrollers, Data Structures & Algorithms, VLSI Design, Communication Systems. Final Year Project: Design and implementation of a real-time traffic monitoring system using embedded microcontrollers and wireless sensor networks, integrating data visualisation via a web-based dashboard.

TECHNICAL SKILLS

- Programming Languages: Python, C/C++, Java, JavaScript (ES6+), MATLAB, SQL, HTML/CSS
- Frameworks & Tools: React.js, Node.js, Django, Flask, Docker, Git & GitHub, JIRA, Linux/Unix, VS Code, Jupyter Notebook
- Hardware & Embedded: Arduino, Raspberry Pi, FPGA (Xilinx), PCB design (Eagle), VHDL, ARM Cortex
- Databases: MySQL, PostgreSQL, MongoDB, SQLite
- Concepts: RESTful APIs, Agile/Scrum, IoT Systems, Cloud Computing (AWS), Machine Learning, Systems Integration

WORK EXPERIENCE

Senior Embedded Systems Engineer | CoreTech Dynamics, Chicago, IL, June 2022 – Present

- Lead the design and development of firmware for IoT-enabled industrial control systems deployed across manufacturing plants in the Midwest.
- Architect low-latency communication protocols using C/C++ and ARM Cortex-M microcontrollers, reducing system response time by 35%.
- Collaborate with hardware and QA teams in an Agile environment to deliver firmware releases on schedule across two-week sprints.
- Mentor two junior engineers, conducting code reviews and supporting their onboarding onto embedded development workflows.
- Integrate cloud telemetry pipelines using AWS IoT Core, enabling remote monitoring and predictive maintenance capabilities.

Software & Systems Engineer | Nexus Engineering Solutions, Chicago, IL, August 2020 – May 2022

- Developed and maintained Python-based data acquisition tools used to log and analyse sensor data from field devices.
- Built RESTful API services using Django and Flask, enabling seamless communication between embedded hardware and web dashboards.
- Contributed to the migration of legacy on-premise systems to cloud infrastructure, improving uptime and reducing operational costs by 20%.
- Participated in cross-functional sprint planning and retrospectives, consistently delivering against engineering milestones.
- Produced comprehensive technical documentation and test reports for client-facing system deployments.

Junior Systems Engineer | *MidWest Tech Group, Chicago, IL, September 2019 – July 2020*

- Assisted in the development and testing of embedded control systems for smart building automation projects.
- Wrote and executed unit and integration tests using Python scripts, improving test coverage by 25% on key subsystems.
- Supported hardware bring-up activities including PCB debugging, oscilloscope measurements, and signal analysis.
- Collaborated with senior engineers to document system architecture, component datasheets, and interface specifications.

PROJECTS

Real-Time Traffic Monitoring System | *BSc Final Year Project, Northwestern University, 2019*

- Designed an embedded wireless sensor network to collect live traffic data and stream it to a web dashboard for real-time visualisation.
- Implemented inter-device communication using Zigbee protocol and developed a lightweight backend in Python/Flask.

Smart Home Automation Hub | *Independent, 2021*

- Built a Raspberry Pi-based home automation controller integrating lighting, temperature, and security sensors via MQTT protocol.
- Developed a React.js frontend dashboard for monitoring and controlling all connected devices remotely.

PROFESSIONAL DEVELOPMENT

- AWS Certified Cloud Practitioner — Amazon Web Services, 2023
- Introduction to Machine Learning — Coursera (Stanford University), 2022
- Embedded Systems Design — edX (University of Colorado Boulder), 2021
- Member, Institute of Electrical and Electronics Engineers (IEEE), 2020 – Present

INTERESTS

Open-source hardware projects, competitive programming (LeetCode), reading about AI and robotics, football, and community STEM outreach.

REFERENCES

Available upon request.