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# Motunrayo Sanyaolu

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**Electronics Engineering student** with hands-on experience designing and testing embedded and electromechanical systems. Curious, proactive, and skilled in PCB design, C/C++, and CAD prototyping, with a drive to turn complex ideas into practical, reliable solutions.

## EDUCATION

- **Bsc. Electrical & Electronics Engineering,** University of Lagos, Akoka, Nigeria **2021 - 2027**

## SKILLS

- Electrical & Software: Embedded Linux, C, C++, Python, FPGA, Verilog, Git, ARM, KiCad, Circuit Design, Proteus, Bare-Metal Programming, RTOS (FreeRTOS/Zephyr), MATLAB, Simulink, IoT Systems, Embedded Systems, Communication Protocols (SPI, I²C, UART, CAN),
- Electrical tools: Oscilloscopes, Multimeters, Power Supplies, Logic Analyzers, Soldering, Debugging and Testing
- Soft Skills: Leadership, work ethic, communication, teamwork, problem-Solving, proactive learning.

## WORK EXPERIENCE

**Unilag Design Studio** – Lagos, Nigeria | On-site

*Head of Training and Development* **Sept. 2024 – Sept. 2025**

*Studio Assistant (Operations)* **Jan. 2023 – Sept. 2024**

- Led system integration of electronics, sensors, actuators, and firmware, developing standard test procedures and performing hardware debugging with oscilloscopes and logic analyzers to improve system stability by 40%.
- Designed, fabricated, and assembled 15+ electromechanical prototypes using Fusion 360, 3D printing, laser cutting, and CNC machining, reducing fabrication time by 30% and component costs by 25% through optimized part design.

*Research Intern* **Oct. 2022 - Dec. 2022**

- Managed **firmware–hardware co-design** for **Neoblankey**, a neonatal warming system that improved temperature regulation accuracy by **±0.5 °C** using closed-loop sensor feedback and locally sourced materials.

**Rice University** – Texas, United States | On-site

*Research and Development Intern* **June. 2024 – Jul. 2024**

- Executed full-cycle development of **AquaBot**, an **IP67-rated automated water collection and analysis system**, achieving a **95% reduction in manual sampling time** and full operation under variable outdoor conditions.
- Developed ESP32-based control system in C++ integrating a stepper motor-driven peristaltic pump & **sensors** via **SPI, I²C, UART, and MODBUS** protocols; designed power and control circuits, optimizing response latency below 100 ms.
- Designed and fabricated **mechanical and electronic subsystems** using **Fusion 360, SolidWorks, 3D printing, and welded aluminum framing**; validated frame design through **weight test** to **80+ kg.**
- Applied the Engineering Design Process from research to final prototype, iterating through low- and mid-fidelity designs, testing functionality, and presenting the solution to professors, CEOs, and industry leaders.

**NITDA IT Hub** – Lagos, Nigeria | On-site

*IoT Ecosystem Lead* **Aug. 2022 – Aug. 2023**

- Led a team of 6 in developing a smart home IoT prototype integrating sensors, ESP32, and automation for lighting, doors, and electronics to achieve **80% automation** adaptable to a real-life home.
- Managed **weekly strategy meetings**, coordinated IoT projects, and conducted **training sessions** to advance innovation in connected systems.

## PROJECTS

**CAD Designs(CAD)**

- AquaBot **-** Automated IP67 device for river water collection and storage to reduce manual labor by 95%. (github)
- NeoBlankey **-** A multifunctional heating blanket for neonates optimized for low-cost manufacturability. (github)

## CERTIFICATIONS

- **Electronics Design and PCB**, Autodesk **2025**
- **Advanced C Programming,** Microchip University **2025**
- **Internet of Things**, IoT Systems Design & Embedded Integration, CurtinX University **2024**