

Abdulsalam Babajide BODE-OKUNADE

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I am a hands-on, embedded-focused robotics engineer who loves building real systems. I am most alive when wiring sensors, programming controllers, assembling robots, and making hardware come to life. Certified with expertise in **Automation**, **Embedded Systems**, and **Mechatronics**. Hands-on experience in IoT solutions, microcontroller-based projects, and robotic embedded systems. Proficient in **Python**, **C++**, **MATLAB**, **CAD**, and **Electronics**, with additional experience in PLC programming. Passionate about leveraging technology to enhance operational efficiency and solve complex challenges.

EXPERIENCE

Embedded Systems Engineer

Jul 2025 - Present

[Proforce Galaxies](#), Ogun, Nigeria

- Responsible for developing and optimizing embedded software for satellite avionics, payload, and ground station equipment
- Designing fault-tolerant satellite subsystems including attitude control, propulsion, communication interfaces, etc.

Robotics Engineer and Researcher

Feb – Jul 2025

[Robotics and Artificial Intelligence, Nigeria \(RAIN\)](#), Oyo, Nigeria

- Working on various projects, including **unmanned ground vehicle**, **computer vision** and other **embedded systems technologies**.
- Using **Fusion 360** for product design.
- Doing research on new technologies, implementing them, and teaching them to trainees.

Electrical/Automation Engineer – (NYSC)

Apr 2024 - Jan 2025

[KAM INDUSTRIES](#), Kwara, Nigeria

- Managed electrical connections for field maintenance boards, including three-phase, two-phase, and single-phase systems.
- Collaborated with teams to troubleshoot and repair various industrial machinery.
- Performed monthly maintenance on double-girder cranes, and diagnosed and repaired industrial motors.

Lead Robotics Engineer

Apr - Nov 2023

[FUNAAB](#), Ogun, Nigeria

- Led a team of three in developing a **Robotic Seed Planter** with real-time monitoring via a custom-built web application for my undergraduate final-year project.
- Implemented autonomous navigation and seed-planting mechanisms using microcontrollers and feedback sensors.
- Designed the electrical system for the robot and programmed the software and web application from scratch using **C++**, **HTML**, **CSS**, and **JavaScript**.

- Integrated communication between microcontrollers using WebSockets protocol.

Robotics and Automation Engineer

Feb 2022 - Apr 2023

[*Robotics and Artificial Intelligence, Nigeria \(RAIN\)*](#), Oyo, Nigeria

- Worked on numerous embedded systems projects, including a **self-balancing robot**, **remote-controlled drone**, **plane and car**, and a **bionic exoskeleton arm** for upper limb deformities.
- Developed an **unmanned fixed-wing aircraft** for emergency medical supply delivery.
- Mastered **Fusion 360** and **SolidWorks** for Computer Aided Designs (CAD).
- Employed as support staff, Feb 2023 to Apr 2023, to train new and existing trainees in robotics and automation.

Automation Engineering Intern

Aug - Oct 2021

[*Nigerian Breweries PLC*](#), Oyo, Nigeria

- Developed a **pedestrian safety system** for the logistics department.
- Created a real-time solution for a **CO₂ valve leak**, reducing production downtime by 50%.
- Performed calibration and troubleshooting of factory sensors.

TOP COMPLEX PROJECTS

Robotic Seed Planter: Design and Development of an Unmanned Ground Vehicle

Nov 2023

- Led a team of 3 in the design and development of a Robotic Seed Planter for automated agricultural operations, with a web application to monitor real-time performance.
- Implemented autonomous navigation and seed-planting mechanisms using Arduino, feedback sensors and more.
- Built the web application and controller from the ground up using C++ programming language.
- Integrated WebSockets for communication between the Server and Brain microcontrollers.
- Published findings in the IAES International Journal of Robotics and Automation (IJRA), June 2024.

FWARP - Fixed Wing Plane for medical supplies delivery

Sep 2022

- Designed and developed the aircraft using PVC foam boards and carbon fibre for the body structure.
- Carbon fibre rods were used inside the wing structure for improved strength.
- Utilized ArduPilot for the flight control system.
- The plane couldn't lift off at the end of the project, because of some centre of gravity miscalculations, but it was a worthy project, that required technical know-how.

Two-Wheeled Self-Balancing Robot

July 2022

- The whole control system was programmed in C++.
- Utilized Proportional-Integral-Derivative, PID, controller for constant control modulation.

- Integrated Kalman Filter to process sensor data. Filtering out noise and uncertainty, thereby providing the PID controller with cleaner input data.
- A gyroscope was used to detect the angle of the robot and provide that data to the control system for processing to enable it to stand on two wheels effectively.

Bionic Exoskeleton Arm

Apr 2022

- Worked alongside an Artificial Intelligence developer to address the lack of an effective system for exercising upper limbs in humans with Erb's Palsy.
- The control system was programmed using C++ and Python.
- Servo motors were used for the joints and, wood and rubber straps for the frame.
- A wireless control was implemented to help direct and monitor the angle of rotation of the arm.
- A PID controller was also used to make sure the defined range of motion was adhered to as smoothly as possible.

Smart Door Bell System

Feb 2022

- Designed and developed a smart doorbell system with an ESP32 CAM.
- The system was programmed using C++.
- The system was paired with a smartphone and sends alerts with a picture of anyone who presses the doorbell to the paired smartphone anywhere in the world.

EDUCATION

Federal University of Agriculture Abeokuta

Apr 2018 - Dec 2023

Bachelor of Engineering in Mechatronics Engineering

Majored in Robotics and Automation

Ogun, Nigeria

Robotics And Automation Developer

Mar 2022 – Feb 2023

Robotics and Artificial Intelligence Nigeria (R.A.I.N), Ibadan, Nigeria

Oyo, Nigeria

PUBLICATIONS

- [*Design and Development of an Unmanned Ground Vehicle for Seed Planting \(Robotic Seed Planter\)*](#)
IAES International Journal of Robotics and Automation (IJRA), June 2024.

SKILLS AND ADDITIONAL INFORMATION

Industrial Technology

- **Technical:** Maintenance and repair, wiring, circuit analysis, motors, drives, and control systems. Troubleshooting; Contactors, breakers, relays, industrial machinery, and electrical connections.

Modern Technology

- **Technical:** Embedded Systems, IoT, Electrical Circuit Design, Automation, Robotics, 3D printing and CAD Design (Fusion 360, SolidWorks), Control Systems.
- **Programming:** Python, C++, MATLAB, ROS (Robot Operating System).
- **Tools:** Platform.io, Arduino IDE, Visual Studio Code, Linux.

Soft Skills: Leadership, Communication, Teamwork, Adaptability, Problem-solving, and Creativity.

Languages: English, Yoruba, Spanish (Basic).

Other Interests: Football, Singing.

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