

DAVID HOPE PRINCE

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EDUCATION

Airforce Institute of Technology (AFIT), B.Eng. in Mechatronics Engineering | Kaduna, Nigeria | Apr 2021 – Jul 2025

- CGPA: 4.71/5.00; First Class Honours; Ranked 3rd of 69 in graduating class
- Relevant coursework: Artificial Intelligence, Machine Vision, Robotics, Control Engineering I & II, Systems Modelling & Simulation, Embedded Systems, Digital Signal Processing

SELECTED PROJECTS

- **Ayo Olopon Game AI:** Built Python/C++ game models, evolved heuristic evaluators, developed minimax/MCTS agents, and trained an AlphaZero-style agent using JAX and OpenSpiel; evaluated 13 checkpoints across 20,800 games, with the final agent achieving a 69.75% draw-adjusted score against MCTS at 64 simulations per move each. [\[link\]](#)
- **Autonomous IED Detection Robot:** Led a 3-person team to build a robot detecting explosive threats at 0.963 mAP, 98% precision and 30 FPS (YOLOv11) with PID-controlled autonomous navigation; won Top Project Award at AFIT's Mechatronics Exhibition. [\[link\]](#)
- **Emergency Traffic Signal Control:** Built a real-time computer-vision prototype that detects emergency vehicles and prioritizes them at traffic signals. [\[link\]](#)

PROFESSIONAL EXPERIENCE

Founder, Candreon | Abuja, Nigeria | Apr 2026 – Present

- Partnered with 20+ businesses to curate 1,000+ hours of human-aligned robot data capturing blue-collar work across 15 verticals in Nigeria
- Built AWS upload and reconciliation infrastructure for robot-data pipelines, handling 1 TB+ per day with 100% upload success

Firmware & Backend Team Lead, Antzhub (TROOTH) | Abuja, Nigeria | Oct 2025 – Aug 2026

- Delivered real-time occupancy and device monitoring on a patent-pending device (MVP in testing) using FreeRTOS firmware, mmWave sensors and a multi-tenant Laravel backend, with 2-second update latency
- Secured provisioning and telemetry with BLE, mutual-TLS MQTT on AWS IoT Core and OTA updates
- Built tenant-isolated analytics (live occupancy, device health, daily occupancy reconstruction); led a team of 3 engineers

Intern, National Centre for AI and Robotics (NCAIR) | Abuja, Nigeria | Jun 2024 – Oct 2024

- Built an IoT-enabled ECG monitor streaming heart-rate and waveform data to a web dashboard
- Implemented LeNet, AlexNet and MobileNet in PyTorch and TensorFlow, reaching over 95% accuracy on CIFAR-10 and Fashion-MNIST

Mechatronics Intern, Industrial Training Fund | Abuja, Nigeria | Dec 2023 – Jan 2024

- Automated bottle capping on a conveyor belt using PLCs and ladder logic; ran experiments on pneumatic and hydraulic actuators and induction motors

LEADERSHIP, TEACHING & OUTREACH

Outreach Coordinator, One Million Kids Project, Techspace Innovators | Abuja, Nigeria | Oct 2025 – Present

- Reached 1,126 students across 3 partner schools in 3 states through Micro:bit STEM outreach, toward a goal of 1 million learners
- Mentored a student to win Forward Education's AI for Good Competition
- Taught 50+ students Arduino robotics in weekly four-hour sessions at Capital Science Academy (volunteer, Nov 2025 – Jan 2026); mentored a team to 1st place at the 2025 STEAM Competition

TECHNICAL SKILLS

Machine Learning: PyTorch, TensorFlow, JAX, Reinforcement Learning (MCTS, AlphaZero-style self-play), Computer Vision, Deep Learning | Robotics & Control: ROS 2, Webots, PID Control, Sensor Integration | Programming: Python, C++, MATLAB | Embedded & Prototyping: ESP32, Arduino, FreeRTOS, SolidWorks, AutoCAD, 3D Printing | Tools: OpenSpiel, Modal, AWS

CERTIFICATIONS

- Unsupervised Learning, Recommenders and Reinforcement Learning, DeepLearning.AI & Stanford (Aug 2024) [\[link\]](#)
- Advanced Learning Algorithms, DeepLearning.AI & Stanford (Jul 2024) [\[link\]](#)
- Robot Operating System (ROS 2) [\[link\]](#)
- Embedded Systems Cohort, National Centre for AI and Robotics (NCAIR) (2024)

AWARDS

- **Top Project Award, AFIT Mechatronics Exhibition; one of 4 Nigerian student representatives invited to exhibit at the African Chiefs of Defense Staff Summit**
- Valedictorian (Best Graduating Student) of the Technical Class, Faith Academy School

SELECTED PUBLICATIONS & WRITING

- H.P. David, Y. Bello, K.O. Shobowale, T. Oladepo, and A-A. Daniel. "Development of an autonomous robot for IED and IED component detection using rocker-bogie mechanism and computer vision." International Journal of Intelligent Machines and Robotics 2, no. 1 (2026): 84–108. [\[link\]](#)
- AlphaAyoOlopon: Teaching Machines to Play Ayo. [\[link\]](#)