

SHUAIB, KHALIFA YAQUB

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Nigerian Society of Engineers (NSE) Graduate Member
Luxury Place Estate, Lugbe, Abuja (FCT)

Mobile: 0802-395-1872

SUMMARY

Passionate innovator with extensive experience in IoT, robotics, and AI applications. Initiated and developed multiple technology ventures while maintaining a 4.8/5.0 GPA in engineering. Demonstrated expertise in developing cutting-edge solutions across healthcare, agriculture, and asset management sectors. Strong track record of leading cross-functional engineering teams and securing strategic partnerships with government agencies and research institutions. Combines deep technical knowledge in hardware prototyping, software development, and system architecture with proven team leadership abilities. Particularly skilled in transforming complex technical concepts into practical, market-ready solutions with demonstrated success in product development from concept to deployment.

EDUCATION

Afe Babalola University (ABUAD) – Ado-Ekiti, Ekiti State

October 2023

Bachelor of Engineering in Mechatronics Engineering | First Class Honours

CGPA: 4.80/5.00 | 5× Founder's Award (Top GPA)

Final Project: *Development of Quadcopter for Aerial Irrigation and Herbicide Spraying with Feedback Mechanism*

Relevant Coursework: Robotics & Automation, Electromechanical Systems, Digital Systems & PLCs, Control Systems

The University of Manchester – Manchester, United Kingdom

July 2027

MSc Robotics (In View)

TECHNICAL PROFICIENCIES

Engineering Software: SolidWorks (3D modelling, simulation) · AutoCAD · Altium Designer (PCB design) · MATLAB

Programming & Embedded: C / C++ (microcontrollers) · Python · JavaScript · Arduino / PLC programming

Data & Analytics: Python (Pandas, NumPy, ML) · MS Excel (VBA/Financial Modelling) · SQL

Manufacturing & Prototyping: FDM 3D printing · CNC machining · Chemical PCB etching · Fabrication & assembly

Systems & Domains: IoT architecture · Automation systems · Embedded systems · Industry 4.0 / Smart manufacturing

Languages: English (fluent) · Hausa (fluent) · French (basic)

RELEVANT EXPERIENCE

Terra Industries (formerly TerraHaptix)

April 2026 – August 2026

Mechatronics Engineer – Idu, Abuja

- Redesigned sentry tower control architecture using an Nvidia Jetson platform, implementing tamper detection, PTZ control, and secure video transmission via Python and systemd services
- Designed and fabricated mechanical components for drone, UGV, and sentry tower platforms using CAD and FDM 3D printing
- Developed custom PCBs for electrical and system integration across multiple hardware projects

Future Fish AgroTech

August 2024 – September 2026

Co-Founder / CEO – Abuja

- Founded and led development of AI-powered aquaculture solutions, driving innovation in automated fish farming systems and IoT integration.
- Secured strategic partnerships with IITA and federal government research initiatives, positioning company as a leader in agricultural technology innovation.
- Spearheaded company vision and strategy, developing smart monitoring and automation solutions to revolutionize traditional fish farming practices.
- Led fundraising initiatives and strategic planning while building cross-functional teams across engineering, research, and business development.

FundusAI LTD · Chief Technology Officer

July 2022 – July 2025

AI-powered diabetic care & ophthalmic diagnostic startup

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- Led a 12-engineer cross-functional R&D team, synchronising hardware and software milestones with commercial go-to-market objectives, delivering the product on schedule and within budget.
- Analysed data from 1,000+ patient health screenings to identify UX friction points; redesigned the user flow and drove a 25% increase in patient follow-up rates.
- Built an Excel-based ROI and depreciation model for a B2B equipment-lending scheme, providing the financial case that secured a strategic financing partner for regional expansion.
- Translated complex AI diagnostic outputs into board-level presentations for the CEO and public health sector leaders, influencing multi-stakeholder adoption decisions.

National Agency for Science and Engineering Infrastructure (NASENI)

January 2024 – October 2024

Manufacturing Engineering Intern (NYSC) – Idu, Abuja

- Operated and programmed PLC-controlled automation systems in the Industry 4.0 Lab, gaining direct experience with industrial-grade process control.
- Produced multiple 3D-printed functional components, shortening prototype-to-test cycle by eliminating third-party fabrication dependency.
- Conducted cost-benefit analysis on compressed air motor designs using new simulation software, reducing material waste and improving industrial application viability.

Trykey Protocol

April 2024 – December 2025

Chief Technology Officer – Abuja, Nigeria

- Directed a 9-engineer hardware and prototyping team to architect and deploy an end-to-end IoT asset monitoring system, successfully launching the inaugural deployment in the hospitality sector.
- Integrated embedded IoT hardware with a blockchain-based backend, engineering innovative, payment-controlled electromechanical access mechanisms for physical asset management.
- Reduced system latency by 50% by optimizing the real-time data pipeline between embedded edge devices and the central asset management dashboard.

National Center for Artificial Intelligence and Robotics (NCAIR)

March 2022 – August 2022

Prototyping Intern – Wuye, Abuja

- Managed FabLab production operations; CNC machining, chemical PCB etching, and 3D printing, delivering components across multiple concurrent robotics projects.
- Managed end-to-end development of robotics prototypes; delivered 100% on spec and on deadline across a 6-month cycle.

Centre for Satellite Technology Development (CSTD) July 2021 – September 2021

Design Engineer – Lugbe, Abuja

- Led design and simulation of a CubeSAT, developing comprehensive satellite system models and specifications.
- Spearheaded the Rocker-Bogie Space Rover project, managing design optimization and performance simulations.
- Created detailed designs for critical satellite components while gaining expertise in space technology systems.

SELECT PROJECTS

Solar-Powered IoT Modular Aquaculture Automation – Alimosho, Lagos

January 2026

- Engineered a highly resilient, distributed IoT control architecture featuring a transient-stable, multi-stage power distribution module with automated switchover between PWM-controlled solar and mains power.
- Implemented a publish/subscribe MQTT architecture supporting 4 data publishes per minute per node, sufficient for supervisory monitoring and control, while maintaining stable operation under intermittent connectivity and constrained power budgets.
- Designed an 8-pond controlled experiment to quantify waste from manual feeding, then built a predictive ML model that optimises feed schedules against live environmental data, targeting ~15% reduction in operational costs for smallholder fish farmers.

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Asset Management and Yield Security System – Abuja

October 2024

- Quantified client financial leakage from asset theft and misuse; designed a tamper-proof IoT payment-verification protocol that eliminated financial discrepancies and improved operational transparency. Presented findings to client stakeholders to drive adoption.

Handheld Ophthalmoscope for Mobile Phone Fundoscopy

January 2025

- Conducted rigorous tolerance analysis on 3D-printed housing geometries and reciprocating helical gear mechanisms, maintaining optical axial alignment within $\pm 2\text{mm}$ to compensate for FDM shrinkage.
- Optimized LED diffuser geometry and applied advanced ray-tracing principles, achieving $>50\%$ illumination uniformity and a 15% improvement in peripheral clarity.

QR-Code Attendance & Analytics System – Ado-Ekiti, Ekiti State

July 2023

- Replaced paper-based attendance tracking with a digital QR system and built a reporting dashboard surfacing student engagement KPIs. Adopted faculty-wide over a 2-semester lifecycle.

Rocker-Bogie Rover – CSTD, Abuja August 2021

- Designed and simulated a 6-wheel rocker-bogie UGV platform, engineering a 3-DoF passive suspension mechanism with a differential tie-rod constraint to guarantee continuous ground contact across uneven terrain.
- Calculated complex static stability margins and center of gravity optimization to ensure operational reliability on 45-degree inclines, iteratively tuning motor-gear ratios to achieve precise torque-speed outputs.

LEADERSHIP & COMMUNITY

Graduate Member, Nigerian Society of Engineers (NSE) – Ado-Ekiti, Ekiti State

July 2023

President, Nigerian Universities Engineering Students' Association (NUESA), ABUAD – Ado-Ekiti, Ekiti State

July 2023

- Organised the inaugural Engineering Summit linking ABUAD students with national industry leaders; grew chapter membership by 300+; created the university's first industry internship registry.
- Led renovation of the engineering college lobby; managed contractor relationships, budget, and stakeholder sign-off to deliver the project on time.

Volunteer, ABUAD Green Club – Ado-Ekiti, Ekiti State

July 2021 – July 2023

- Co-ordinated environmental sustainability initiatives and coordinated campus-wide eco-friendly projects.

AWARDS & GRANTS

- PTDF Overseas Scholarship Scheme (OSS) Award** — Full, merit-based funding for graduate studies following a highly competitive national selection process.
- Fourth Industrial Revolution Application Research Grant** — ₦10,000,000 (Federal Government of Nigeria)
- iHatch 2.0 Winner** — \$15,000 (National Information Technology Development Agency (NITDA))
- Founder's Award for Academic Excellence (5x)** — \$300 (Afe Babalola University (ABUAD))

CERTIFICATIONS & HONOURS

National Youth Service Corps (NYSC) | Status: Completed

24 November 2023 – 23 November 2024

HSE Level 1 - Award in Health and Safety at Work | Grade: Distinction

August 2021

HSE Level 2 - Risk Assessment Practical Application | Grade: Credit

August 2021

HSE Level 3 - Award in Environmental Awareness | Grade: Distinction

August 2021

Basic First Aid/CPR – Novelle Center

August 2021

Environmental Impact Assessment – Department of Petroleum Resources

September 2021

Introduction to Computer Science – Harvard University (edX)

December 2020