

David Kenechukwu Okonkwo

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EDUCATION

African Leadership University

Software Engineering (B.S)

G.P.A: 4.57/5.0

Kigali, Rwanda

July 2026

Coursework: Front-End Web Development, Enterprise Web Development, Web Infrastructure

SKILLS

Computer: JavaScript, Python, React, Flask, Pygame, C/C++, Arduino, Mongo DB, Microsoft Office (Word, Excel, PowerPoint), familiar with AutoCAD

Interests: Embedded Systems, Robotics

ACADEMIC PROJECTS

BioCycle (Web Application)

Mar. 2023

- Collaborated with a team to develop an interactive tool that calculates the proportion of organic materials for composting
- Designed the user interface for the web application
- Incorporated Python's Flask framework in routing and handling HTTP requests
- Built relational database using MySQL for storing and retrieving user records

Autonomous Safety Robot for Gas Industries

Aug. 2023

- Managed a team of five in designing and programming a robot using LEGO Spike kit
- Implemented navigation and obstacle avoidance logic in back-end code
- Integrated flame and smoke detection using sensors
- Presented prototype at the Coderina robotics hackathon

Percolation Threshold Estimation via Monte Carlo Simulation

Apr. 2023

- Researched and tested different dynamic connectivity algorithms
- Improved and implemented Quick-union algorithm using Classes and Objects
- Estimated percolation thresholds for multiple physical systems
- Created a visual simulation of dynamic connectivity algorithm using python's Pygame library

NFT Marketplace (Website)

May 2023

- Developed an interactive user interface to sell NFTs using react JS library
- Leveraged Solidity language to architect and deploy a smart contract designed for NFT sales
- Developed and tested Ethereum smart contract using Hardhat and ethers.js
- Integrated MetaMask digital wallet for cryptocurrency transactions

WLAN Menu-Order System for a Restaurant

Oct. 2023

- Created a Wireless local area network (WLAN) and a captive portal using an ESP8266 to connect customers to menu page
- Developed a system to make and display meal orders from portal to an LCD display
- Developed an interactive captive portal to make food orders
- Demonstrated the system and its functions at a ALU robotics hackathon
- Explored the application of this system in public transportation in Rwanda

ACADEMIC RESEARCH EXPERIENCE

Childhood Immunization in Uganda

Sept. – Dec. 2022

- Researched key factors that contribute to low immunization rates in Buikwe, Uganda
- Developed a comprehensive advocacy campaign plan, outlining goals, and key performance indicators

Squatter Settlements in Lagos, Nigeria

Jul. 2023

- Collected quantitative data on settlement size and demographics in Lagos, Nigeria
- Analyzed probable outcomes for future settlements in Lagos using future archetype frameworks
- Analyzed health and sanitary conditions within squatter settlements
- Investigated the viability and influence of community-driven initiatives aimed at addressing housing challenges in Lagos.
- Coordinated the development of strategies for community empowerment

HONORS/AWARDS

- 2nd position at African Leadership University Robotics Hackathon
- Certified Lego Spike Training Coach

Oct. 2023

Aug. 2023