Oladipo Sam-Charles

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PROFILE

Electronics & Computer Engineering undergraduate at Lagos State University with hands-on experience in backend and frontend web development. Passionate about the intersection of software and communications infrastructure, with a long-term goal of specializing in Telecommunications and Network Engineering. Currently seeking internship and entry-level opportunities to apply technical skills in real-world environments, contribute to meaningful projects, and grow within a professional engineering setting. Founder of The Circuit Room, an active peer-learning community for ECE students, and co-author of ongoing research on adaptive RRC mechanisms for cellular network congestion.

TECHNICAL SKILLS

Languages & Frameworks: JavaScript (ES6+), TypeScript, HTML, CSS, React.js, Next.js, Vue.js
Tools & Platforms: Git, GitHub, VS Code, Chrome DevTools, Proteus (Simulation), Cisco Packet Tracer
Concepts: Responsive Web Design, API Integration, Component-Based Architecture, DOM Manipulation, Version Control, Digital Electronics, Circuit Simulation

PROJECTS

LogicSim — Browser-Based Digital Electronics Simulator *In Development*

React · TypeScript · Konva.js · Zustand

- Designing and building a full-stack web application for simulating combinational and sequential logic circuits in real time.
- Features an infinite canvas with draggable gate components, live signal propagation with color-coded wire states, a waveform viewer, and a subcircuit system for packaging reusable components.
- UI follows a Bento Grid + Glass morphism design system inspired by Linear.app.

Unify — Student Academic Platform for LASU Engineering Students (Contributor)

2026

HTML · CSS · JavaScript · Firebase

Live · GitHub

- Contributed to a student academic platform for LASU Engineering students, covering a CGPA dashboard and predictor, weekly timetable, course learning library, and student portfolio profiles.
- Implemented responsive UI components and interactive features using vanilla JavaScript with Firebase Auth and Firestore.

KIN AI — Cavista Hackathon Project

2026

React Native· TypeScript · Tailwind CSS

GitHub

- Collaborated in the development of a web application designed to solve a real-world problem during the Cavista Hackathon.
- Built responsive user interfaces and contributed to feature implementation within a fast-paced, team-based development environment.

Ticket Management System *2025*

Vue.js · React · Twig (three independent implementations, shared UI)

GitHub

- Built a full-featured ticket management web application across three separate frontend implementations — Vue.js, React, and Twig — maintaining a consistent UI design across all versions.
- Covers ticket creation, assignment, status tracking, and filtering.
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Oracle — Condition-Based Risk Scoring & RUL Estimation Tool *2026*

React 18 · Vite · TypeScript · Tailwind CSS v4 · Python (Gemini API)

Live

- Led frontend development for Oracle, a condition-based risk-scoring and Remaining Useful Life (RUL) estimation tool for DCP cement plant equipment, built for the DCP University Engineering Challenge (Track 2).
- Built the interface with React 18, Vite, TypeScript, and Tailwind CSS v4, integrating a Python/Gemini API advisory layer for equipment risk insights.
- Authored the frozen data contract and full product requirements document (PRD) guiding the team's implementation.

RFForge — RF/mmWave Power Amplifier Design Calculator *2026*

Next.js · TypeScript · Tailwind CSS

Live · GitHub

- Built a web-based calculation and visualization tool for RF and mmWave power amplifier design, covering impedance-matching network synthesis, PA performance metrics, and frequency-dependent loss modeling up to sub-THz bands.
- Implemented deterministic, equation-grounded calculation modules — impedance matching designer, PA performance calculator, and frequency-scaling/loss visualizer — validated against reference textbook examples and datasheet behavior.
- Added an AI explanation layer that translates numeric outputs into plain-language engineering commentary without altering the underlying calculated values.

Interact. — AI-Powered Adaptive Study Tool *2026*

React · Vite · TypeScript · Supabase

Live · GitHub

- Building Interact., an AI-powered adaptive study tool covering custom material generation, highlight-to-explain, an onboarding flow, and a study dashboard.
- Shaped the product end-to-end as a first solo full-stack build — PRD, design system, and tech stack — with a Node/Express/Supabase backend.

EXPERIENCE & VOLUNTEERING

Founder · The Circuit Room *2026 – Present*

- Founded a peer-led learning community for Electronics & Computer Engineering students, covering all ECE specializations.
- Organizes structured biweekly sessions on technical topics, industry trends, and career development.

Media & Technical Volunteer · Nexus 3.0 Conference · SPE-LASU *2025*

- Volunteered on the Media/Technical team for the annual Nexus conference organized by SPE-LASU.
- Responsibilities spanned photography, videography, and live-streaming event coverage.

EDUCATION

B.Eng. Electronics & Computer Engineering · Lagos State University *Expected 2028*

Currently at 300-level. Coursework spans digital electronics, telecommunications, signal processing, and embedded systems.

Undergraduate Research

Adaptive RRC Timeout Mechanism for Cellular Network Congestion in Dense Crowd Scenarios

Read the paper

- Co-authoring a paper proposing an intelligent, adaptive Radio Resource Control (RRC) timeout mechanism to address cellular network congestion during large-scale events.
- Proposed system dynamically adjusts resource release intervals using real-time crowd density data and a machine learning model trained on historical event data to distinguish active from inactive users.

A Multi-Criteria Evaluation of Electromagnetic Communication Technologies for Hospital Wireless Networks Using the Analytic Hierarchy Process (AHP)

Read the paper

- Co-authored a paper proposing an Analytic Hierarchy Process (AHP)-based multi-criteria decision framework for selecting electromagnetic communication technologies for hospital wireless networks.
- Evaluated six technologies — RF, Microwave, mmWave, THz, IR, and Li-Fi — across seven criteria including patient safety/EMI compatibility, security, reliability, and data rate, with Li-Fi ranking highest overall.

CERTIFICATIONS

Networking Basics · Cisco Networking Academy *2026*

Completed the Cisco Networking Academy Networking Basics course, covering core networking concepts, how network devices connect, and how data moves across networks.

Introduction to Cisco Packet Tracer · Cisco Networking Academy *2025*

Completed the official Cisco Networking Academy course, covering network simulation, device configuration, and basic topology design using Packet Tracer.

LANGUAGES

English — Fluent **Yoruba** — Native