Taofeek Kassim

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Education

University of Lagos Lagos, Nigeria
Bachelor of Science in Applied Physics *Oct. 2023 – Jan. 2028*

- **Relevant Coursework:** Computational Physics, Quantum Mechanics, Digital Electronics, Numerical Methods, Linear Algebra, Statistics.

Experience

Fullstack Developer Intern Aug. 2025 – Oct. 2025
Nithub *Akoka, Lagos*

- Engineered a robust REST API using **Express** and **PostgreSQL**, handling **1,000+** data transactions for an internal task management system.
- Deployed a containerized full-stack application using **Docker**, reducing deployment time by **30%** and optimizing GitHub repository metric analysis.
- Developed a dynamic job board featuring **Bcrypt-based authentication**, connecting recruiters with candidates via an optimized relational schema.

Projects & Quantum Research

Git Watch (Webhook Engine) | *Node.js, Redis, Express, TypeScript* Jan. 2026 – Present

- Designed an asynchronous webhook listener using **Redis queues**, capable of processing spikes of **500+** concurrent GitHub events.
- Utilized **HMAC signature validation** for secure payload verification, ensuring zero unauthorized data injections during processing.
- Implemented an **exponential backoff retry strategy**, maintaining **99.9% data consistency** despite downstream service failures.

Autonomous AI Video Engine | *Node.js, FFmpeg, Whisper AI, HLS.js* Dec. 2025 – Jan. 2026

- Architected an **HLS pipeline** that transcodes raw MP4s into adaptive bitrates, reducing bandwidth consumption by **40%** for end-users.
- Integrated local **Whisper AI** inference to generate time-synced subtitles, saving **100%** on external API costs while reducing latency.
- Built a custom frame-extraction system for **16-column sprite sheets**, enabling instant seek-previews with coordinate-based CSS logic.

Hybrid Optimization for LABS (NVIDIA MIT iQuHACK 2026) | *CUDA-Q, QAOA, Python* Jan. 2026

- Engineered a hybrid heuristic pipeline using **NVIDIA CUDA-Q** to solve the Low Autocorrelation Binary Sequence (LABS) problem for $N = 25$ qubits (2^{25} search space).
- Mitigated Barren Plateau effects via "Quantum Seeding," utilizing a QAOA kernel on **NVIDIA T4 GPUs** to initialize classical Hill-Climbing, achieving a **3.4x Merit Factor improvement** over pure quantum baselines.

Leadership & Volunteering

Google Developer Groups (GDG) on Campus Jan. 2026 – Present
Core Team Member – Sponsorships *Lagos, Nigeria*

- Collaborating within a **cross-functional core team** to organize technical workshops and hackathons for a community of **1,000+** student developers.
- Leading **sponsorship outreach** and pitching the organization's value proposition to secure resources for high-impact campus tech events.

Technical Skills

Languages & Frameworks: TypeScript, JavaScript, Go, SQL, React, Next.js, Node.js, Express, HTML, CSS
Infrastructure & Tools: Docker, Redis, PostgreSQL, Git, Linux (Bash), AWS, FFmpeg, HMAC
Quantum & Science: CUDA-Q, Python, Qiskit, NumPy, SciPy, Matplotlib, Physics Simulation