

# OKORIE CYNTHIA KALU

Backend Engineer | AI Systems Experience | FastAPI & PostgreSQL

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## PROFESSIONAL SUMMARY

Backend engineer specialising in Python, FastAPI, and PostgreSQL, with hands-on experience building and deploying AI-powered REST APIs. In under a year, shipped three production systems integrating LLMs (OpenAI, Gemini), real-time streaming, background task queues, OAuth, and structured logging. Brings 7 years of systems thinking and delivery under pressure from education and administration. Focused on building reliable systems that handle real-world constraints.

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## TECHNICAL SKILLS

- **Languages:** Python
  - **Frameworks:** FastAPI, SQLAlchemy 2.0 (async), Django
  - **Databases:** PostgreSQL, SQLite
  - **AI:** OpenAI GPT-4o-mini, Google Gemini, Prompt Engineering
  - **Auth:** JWT, Google OAuth 2.0
  - **Async & Tasks:** Celery, Redis, Server-Sent Events (SSE)
  - **Tools:** Docker, Git, GitHub, Alembic, Postman, Render
  - **Concepts:** REST APIs, rate limiting, atomic transactions, structured logging, async systems
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## PROJECTS

### *MediBook API — Smart Healthcare Appointment System*

*FastAPI · PostgreSQL · OpenAI · Celery · Redis · OAuth · Render*

*Live* → <https://medibook-api-9xi4.onrender.com/docs>

*GitHub* → <https://github.com/CynthiaKaluson/medibook-api>

- Designed and deployed a production REST API supporting role-based booking for clinics and patients with JWT and Google OAuth
  - Built an AI slot suggestion system that analyzes symptoms and classifies urgency (low / medium / high), improving booking decisions
  - Prevented double-booking using atomic slot-locking and transactional conflict handling at the database level
  - Implemented background email workflows (confirmation, cancellation, reminders) using Celery with fault-tolerant execution
  - Production hardened with timeout handling, retry logic, and structured logging configurable via environment variables
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### *ScholarIQ AI — Academic Writing & Citation Validation API*

*FastAPI · Gemini · Docker · Render*

*Live* → <https://scholariq-ai.onrender.com/>

*GitHub* → <https://github.com/CynthiaKaluson/scholariq-ai>

- Built an AI backend that generates structured academic content adapted by type, category, and level using a prompt intelligence layer
  - Designed a citation validation system that detects hallucinated or malformed references in LLM outputs
  - Implemented streaming responses for long-form content, reducing perceived latency during generation
  - Secured API with key-based authentication and rate limiting via SlowAPI
  - Structured modular architecture separating routing, validation, AI services, and core logic
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## ***Cerebro API — Real-Time Socratic AI Conversation System (In Progress)***

*FastAPI · PostgreSQL · SSE · OpenAI · Docker*

[GitHub → https://github.com/CynthiaKaluson/cerebro-api](https://github.com/CynthiaKaluson/cerebro-api)

- Building a persistent AI conversation system where users engage in structured, multi-threaded dialogue
  - Streams responses token-by-token using SSE with fully async architecture (SQLAlchemy async + asyncpg)
  - Implements JWT-secured user sessions with full conversation history stored in PostgreSQL
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## **EXPERIENCE**

### ***Backend Developer — Independent Projects***

*2024 – Present • Remote*

- Built and deployed three production-grade FastAPI systems integrating OpenAI and Gemini APIs
  - Designed backend architecture including authentication, rate limiting, async workflows, and cloud deployment
  - Iterated rapidly based on feedback from experienced engineers, shipping improvements within 24 hours
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### ***School Administrator & Classroom Teacher***

*2018 – 2024 · Port Harcourt*

- Managed administrative systems serving hundreds of students in high-pressure environments
  - Led coordination, documentation, and communication across teams
  - Applied structured problem-solving and system thinking now used in backend engineering
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## **ADDITIONAL EXPERIENCE**

### **Freelance Web Developer (WordPress)**

*2021 – 2023 • Remote*

- Developed and deployed client websites including a mental health blog and an e-commerce platform
  - Managed site setup, customization, and content structure using WordPress
  - Worked directly with clients to translate requirements into functional web solutions
  - Maintained sites post-launch, handling updates and troubleshooting
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### **Remote Transcriptionist**

*2020 – 2022 • Freelance*

- Delivered accurate transcription under tight deadlines, strengthening attention to detail and time management
  - Worked independently in a remote setting, maintaining consistency and quality across assignments
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## **EDUCATION**

### **ALX Backend Engineering Programme**

*ALX Africa • 2024–2025*

### **Postgraduate Diploma — Public Health**

*Abia State University • 2021–2022*

### **Higher National Diploma — Environmental Health**

*College of Health Technology, Ebonyi • 2014 – 2018*