

JOSHUA NWACHINEMERE

AI Engineer | Python, Retrieval, Context Engineering, Multimodal AI & ML Evaluation

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PROFILE

AI Engineer building Python systems around language, vision, and speech models. Work spans retrieval and context assembly, multimodal inputs, real-time transcription, model/API integration, FastAPI services, asynchronous workflows, and ML evaluation. Building VolyxAI with explicit data flow, validation, observability, and human control. Open to AI Engineer and ML Engineer opportunities.

CORE SKILLS

- Languages: Python, SQL
- AI Engineering: retrieval, context engineering, multimodal inference, voice AI, structured outputs, provider routing, model evaluation
- Models & Providers: Azure AI Foundry, OpenAI, Anthropic, Gemini, DeepSeek, Deepgram
- ML & Data: scikit-learn, XGBoost, pandas, feature engineering, temporal evaluation
- Backend & Automation: FastAPI, asyncio, REST APIs, n8n, webhooks, SQLAlchemy
- Data & Infrastructure: PostgreSQL, SQLite, Redis, Docker, GitHub Actions, Linux
- Security: Suricata, Snort, VirusTotal API, OSINT, DNS analysis, secure credential management

INDEPENDENT PRODUCT & ENGINEERING WORK

AI Engineer · VolyxAI product work | Nov 2025 - Present

Independent product effort

- Developing applied AI systems that combine model and provider integration, retrieval and context assembly, voice and multimodal workflows, and structured outputs.
- Building Python services and event-driven n8n workflows around external APIs, webhooks, validation, retries, logging, and human approval.
- Exploring provider routing, fallback, cost, latency, and privacy trade-offs across Azure AI Foundry, OpenAI-compatible APIs, and transcription providers.

Key tools: Python, FastAPI, n8n, REST APIs, webhooks, Azure AI Foundry, OpenAI-compatible APIs, PostgreSQL, Redis

AI, Backend & Automation Projects | Jan 2021 - Present

Independent engineering work

- Built Python automation and backend utilities for data processing, Telegram bots, API integrations, and operational tooling.
- Created asynchronous VirusTotal scanning and multi-chain wallet analytics with validation, caching, pagination, and rate-limit handling.
- Developed and evaluated an experimental football forecasting pipeline with temporal features, calibrated models, FastAPI, and rolling-origin testing.

Key tools: Python, Async I/O, Telegram Bot API, aiohttp, SQL, Docker, REST APIs

TECHNICAL TRAINING

Threat Detection & Response Capstone | Capstone IT Staffing (Remote) | Jul 2025 - Aug 2025

- Deployed Suricata on Ubuntu, wrote custom Snort rules, and automated alert enrichment with Python and public OSINT sources.
- Built a DNS intelligence CLI with asynchronous resolution, WHOIS lookups, trace output, and JSON export.

OPEN-SOURCE CONTRIBUTIONS

FastStream | Merged PR #2961

Python, FastAPI compatibility, dependency injection, AsyncAPI, pytest | Jul 2026

- Restored FastAPI 0.140 compatibility by adapting FastStream's dependency layer to FastAPI's slotted Dependant model, preserving AsyncAPI metadata and adding nested-dependency regression coverage.
- PR: <https://github.com/ag2ai/faststream/pull/2961>

OpenAI Agents Python SDK | Merged PR #3991

Python, WebSockets, retry policies, pytest | Jul 2026

- Fixed pre-response WebSocket server-error frames bypassing the SDK retry policy, preserving overload and replay-safety boundaries with focused regression coverage.
- PR: <https://github.com/openai/openai-agents-python/pull/3991>

Calkit | Merged PR #1028

Python, CLI workflow execution, pytest | Jul 2026

- Fixed single-item workflow runs preparing unrelated subprojects, narrowing checks to the requested stage with root-project and subproject regression coverage.
- PR: <https://github.com/calkit/calkit/pull/1028>

SELECTED PROJECTS

Volyx Lens | Privacy-First Context-Aware AI Assistant

JavaScript, Electron, Swift, Azure AI Foundry, Multimodal APIs

- Built and hardened a privacy-oriented macOS assistant combining selected screen context, microphone input, meeting audio, local OCR, relevance-ranked retrieval, and multiple AI providers.
- Implemented bounded context memory, transcription and provider routing, explicit data-sharing controls, and cost-aware fallbacks.
- Hardened Electron boundaries with sandboxing, context isolation, restricted IPC, automated tests, secret scanning, and release checks.
- Source: <https://github.com/dk3yyyy/volyx-lens>

Football Predictor | Experimental ML Pipeline

Python, XGBoost, scikit-learn, FastAPI, Streamlit, SQLAlchemy

- Built data scrapers, temporal feature engineering, XGBoost outcome and Poisson goal models, a FastAPI service, and a Streamlit dashboard.
- Evaluated with rolling-origin testing across 1,140 Premier League matches: 53.77% outcome accuracy versus a 56.70% bookmaker-implied benchmark, showing signal but no practical betting advantage.
- Source: https://github.com/dk3yyyy/football_predictor

Noughtline | Real-Time Multiplayer System

React, Express, Socket.IO, SQLite, Paystack

- Built signed guest sessions, server-authoritative moves, reconnect and forfeit handling, transactional match settlement, and an append-only currency ledger.
- Added idempotent Paystack crediting plus automated API, economy, room-state, and two-client Socket.IO tests.
- Live: <https://noughtline.onrender.com> | Source: <https://github.com/dk3yyyy/Noughtline>

CERTIFICATIONS

- Google AI Professional Certificate | Coursera
- Google Cybersecurity Professional Certificate | Coursera

EDUCATION

Bachelor of Technology (BTech), Mathematics | 2016 - 2021

Federal University of Technology, Owerri (FUTO)