

Alexander Wanyoike

Curriculum Vitae

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Profile

Systems engineer with 10+ years of experience designing and building production infrastructure. Specialising in distributed systems, event-driven architectures, and container orchestration. Proficient across TypeScript, Python, C#, and C++ with growing experience in Go and Rust. Deep experience in Kubernetes, AWS, and real-time data pipelines.

Education

2018 – 2020 **MSc Advanced Computer Science** – Distinction, *University of Manchester*

Project: Built an online theorem prover tuning web service using machine learning and genetic algorithms to automate strategy optimisation for the Vampire Theorem Prover

2012 – 2015 **BSc Computer Science (Hons)** – First Class, *University of Manchester*

Project: Applied Streamed KMeans clustering to the Million Song Dataset, building a custom Python web application for music recommendation

Experience

May 2021– Present **Founder & Lead Engineer**, ALPHA NEURON, Manchester.

- **Architected an event-driven microservices platform using Go, NestJS, Next.js, NATS JetStream, PostgreSQL, and MongoDB** – with dual-stream persistence and graceful degradation across service tiers
- **Built a container orchestration engine supporting Docker and Kubernetes deployment modes** – with self-managing bot containers, hash-based state sync, and sidecar query servers across 7 programming languages
- **Integrated Model Context Protocol with 11 tools enabling AI assistants to deploy, manage, and monitor trading bots via natural language** – building an agentic-first platform experience
- Built an automated strategy evaluation harness used to validate trading strategies before live deployment
- **Published SDKs across 6 languages (PyPI, npm, crates.io, NuGet, Cabal, GitHub Packages) and created a Go CLI for microservices orchestration with 30+ bot lifecycle subcommands** – supporting dual-source deployment and Helm chart publishing on Artifact Hub

May 2021– Present **Senior Software Engineer**, RESIDENT ADVISOR, Manchester.

- **Provisioned production infrastructure using Terraform for Kafka MSK, EKS, and EC2** – enabling reproducible, version-controlled cloud environments
- **Built ETL pipelines with Meltano and dbt across PostgreSQL and Redis data warehouses** – automating data transformation and ensuring consistency across downstream services
- **Implemented Kafka dead letter queue strategies for microservice reliability** – reducing message loss and enabling automated retry workflows
- **Designed a GraphQL Federation gateway using GraphQL Mesh with a custom AST traversal algorithm** – enabling dynamic query resolution across federated subgraphs

July 2015– June 2021 **Software Engineer**, AMPERSAND COMMERCE, Manchester.

- **Built long-running serverless services using AWS Fargate and Lambda** – reducing infrastructure costs and enabling auto-scaling workloads
- **Attained AWS Solutions Architect Associate certification** – demonstrating proficiency in cloud architecture and best practices
- **Developed and maintained an integration platform as a service** – building reliable data pipelines between e-commerce systems

Technical Skills

Languages TypeScript, Python, C#, C++, Java, Go, Rust

Infrastructure Kubernetes, Docker, Terraform, Pulumi, Helm, GitHub Actions

Cloud AWS (ECS, EKS, MSK, Lambda, SQS, DynamoDB, S3), GCP (GKE, Cloud Functions, Firebase)

Data PostgreSQL, MongoDB, NATS JetStream, Kafka, Redis, DynamoDB

Frameworks NestJS, Next.js, FastAPI, React, gRPC

Certifications

AWS Solutions Architect Associate
Amazon Web Services

Languages

English Native
Swahili Intermediate
French Basic

Interests

Systems Programming
Algorithmic Trading
Game Development
Open Source

AI Tools

Programming & Software Engineering
Claude
General Purpose
Gemini, ChatGPT