

ARINZE OBIDIEGWU

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SUMMARY

Senior Software Developer and AI Architect with over 7 years of expertise in building autonomous, air-gapped industrial systems. Recently completed an MSc in Artificial Intelligence and Machine Learning at the University of Limerick, achieving First Class Honours. Proven track record in bridging deep-tech research with production engineering, from synthesizing quantum circuits using evolutionary algorithms to architecting distributed multi-agent platforms for smart manufacturing.

EXPERIENCE

Senior Software Developer

Jun 2025 – Present

Gallarus Industry Solutions

Ireland (Hybrid)

- Architecting **KairOS**, a production-grade, edge-native Distributed Multi-Agent AI Platform designed to act as an autonomous "Digital Engineer" for critical infrastructure.
- Solving the "Air-Gapped AI" challenge by designing a zero-cloud architecture that runs sophisticated predictive maintenance agents on local hardware, delivering <15ms inference latency.
- Engineered a non-deterministic event-driven system using **LangGraph**, where specialized agents collaborate to investigate equipment failures and formulate natural language root-cause reports autonomously.
- Integrated **Qwen3** locally with a custom Retrieval Augmented Generation (RAG) pipeline, allowing operators to query technical manuals and live sensor data without internet dependency.

Co-Founder & CTO

Mar 2025 – Present

Spryte Pal

Ireland

- Leading the technical strategy for an AI-driven platform, overseeing the end-to-end architecture and development lifecycle.
- Implementing scalable backend services and AI integration to drive core product value.

Technical Project Manager

May 2022 – Dec 2025

The Safety Chic

New York, USA (Remote)

- Guided the creation of a child safety mobile app in **Flutter**, taking it from concept to a high-impact tool and expanding the user base by 60% via cross-platform deployment.
- Accelerated app development by 35% through effective team leadership and implemented feature enhancements that increased user engagement by 50%.

Research Intern

Nov 2024 – Sep 2025

Lero (Irish Software Research Centre)

Limerick, Ireland

- Pioneered the application of **Grammatical Evolution (GE)** to automatically synthesize high-fidelity quantum circuits for NISQ hardware.
- Developed a pipeline evolving Grover's algorithm circuits that reached **97.7% fidelity** on real IBM quantum hardware, outperforming canonical implementations (68.5%) and reducing gate count by over 90%.

DevOps Engineer

Jan 2023 – Dec 2023

Stock Afrika

Lagos, Nigeria (Remote)

- Achieved 99.9% uptime by managing AWS infrastructure (Elastic Beanstalk, S3, EC2) and reduced deployment time by 50% by establishing CI/CD pipelines using GitHub Actions.

SKILLS

Languages	Python, C/C++, Dart, TypeScript, JavaScript, SQL, Java
Technologies	TensorFlow, PyTorch, Flutter, React, Node.js, AWS, Google Cloud, Firebase, Docker, Kubernetes, Terraform, Git, MongoDB, LangGraph
Concepts	Machine Learning, Quantum Computing, Evolutionary Algorithms, DevOps, Distributed Systems, Multi-Agent Systems, Air-Gapped AI Architecture

EDUCATION

MSc in Artificial Intelligence and Machine Learning

Aug 2025

University of Limerick

First Class Honours

- **Modules:** Data Engineering and Machine Learning, Evolutionary Computation and Humanoid Robotics, Text Analytics and Natural Language Processing, Artificial Intelligence for Games, Machine Vision, Deep Reinforcement Learning, AI Ecosystems, Probabilistic and Explainable AI, Research Methods

BSc in Computer Science

Nnamdi Azikiwe University

- **Modules:** Data Structures, Algorithms, Artificial Intelligence, Machine Learning

CERTIFICATIONS

AWS Academy Machine Learning Foundations

Amazon Web Services (AWS)

- **Focus:** Machine Learning, Machine Vision, Data Engineering, AWS Cloud Computing

AWS Academy Cloud Foundations

Amazon Web Services (AWS)

- **Focus:** Cloud Engineering, AWS Cloud, AWS Core Services, AWS Architecture

Basics of Quantum Information

IBM

- **Focus:** Quantum Computation, Quantum Information, Quantum Theory

PROJECTS

MSc Dissertation: Grammatical Evolution for Quantum Algorithms

Nov 2024 – Sep 2025

BDS Research Group, Lero

- Authored and defended a dissertation on synthesizing executable quantum circuits from scratch using evolutionary computing.
- Designed core grammar and fitness functions that enabled the search to discover high-performing, hardware-aware circuits without explicit noise modeling.

Hackathon Winner – ACI Worldwide

Oct 2024

ACI Worldwide

- Won 1st place by building a complex financial system handling real-time currency conversion, fraud detection, and IBAN proxy resolution under extreme time pressure.

Google BGN Hackathon – 2nd Place

Oct 2024

Google

- Built "Star Student," a web app using Node.js, TypeScript, and Google Gemini API to help teachers create personalized learning stories.