AARON ONTOYIN YIN

AI Researcher

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EDUCATION

University of Mines and Technology, Tarkwa — Jan 2021 - Sep 2025

B.Sc. Electrical & Electronic Engineering: First Class Honors (GPA: 3.91/4.0)

- Undergraduate Research Project: Design of AI-Powered Smart Metering and Analytics System for Optimized Electricity Distribution and Management

PUBLICATIONS & PREPRINTS

- GPTree: Towards Explainable Decision-Making via LLM-powered Decision Trees. arxiv, 2024. (*Provisional Patent*)
- GPT-HTree: A Decision Tree Framework Integrating Hierarchical Clustering and Large Language Models for Explainable Classification. arxiv, 2025.
- LLM-AR: LLM-powered Automated Reasoning Framework. arxiv, 2025.
- VCBench: Benchmarking LLMs in Venture Capital. arxiv, 2025. (*Accepted, Computing Conference 2026, London*)
- From Limited Data to Rare-event Prediction: LLM-powered Feature Engineering and Multi-model Learning in Venture Capital. arxiv, 2025.
- Dual Approach in Autonomous Directional Drilling: Innovations with Drillbotics 1.5 Inch Automated RSS and Virtual Rig Platforms. SPE/IADC International Drilling Conference and Exhibition, 2025.
- Integrating Machine Learning with D-WIS and Domain Expertise for Smarter Well Monitoring. (*In Preparation*)

RESEARCH & PROFESSIONAL EXPERIENCE

AI Researcher — Jan 2024 - Present

Vela Partners — Remote, San Francisco - USA

The world's first product-led and AI-powered venture capital firm.

- Co-invented GPTree algorithm, and developed ML models with 80%+ precision for early-stage startup founder scoring.
- Built Vela's flagship research dataset by aggregating over 20,000+ founder profiles from publicly available and paid sources.
- Contributed to VC Bench, the first standardized benchmark for founder-success prediction in venture capital.
- AI-powered startup sourcing. I have directly contributed to two of the firm's top portfolio investments.
- I am the lead developer of think-reason-learn, an open-source LLM-native machine learning framework.
- I build internal microservices for Vela OS (an operating system for investors and entrepreneurs).

RESEARCH & PROFESSIONAL EXPERIENCE

Drillbotics Research Global Competition — 2023 & 2024

Drillbotics is a global university competition organized by the Drilling System Automation Technical Section (DSATS) of the Society of Petroleum Engineers, challenging student teams to design automated drilling systems.

- Developed components of UMaT's award-winning solutions: an automated digital twin directional drilling software for planning and executing directional drilling projects (2023) and an LSTM model (89.07% recall) for predicting kicks and automating well control (2024).

Power Grid Data Dashboard for GRIDCo — 2025

GRIDCo is Ghana's sole national power transmission operator and a key participant in regional power exchange within the West African Power Pool, transmitting electricity to neighboring countries including Togo, Benin, and Burkina Faso.

- Developed an interactive data dashboard to clean meter readings, analyze power flow, and track transmission losses between generators and consumers. This improved operational visibility and decision-making.

HONORS & AWARDS

- Best Student in Software Engineering, UMaT Excellence Awards (2024)
- IEEEXtreme Programming Competition - 1st place among Ghanaian teams (2023)
- National Science and Maths Quiz, Prime Time - National-level high school representative (2021)
- Ghana Mathematics Olympiad, MISE Foundation - National-level participant (2018); Top 6 finalist (2019)

TECHNICAL SKILLS

- Programming Languages: Python (Expert), C++, JavaScript
- AI & Machine Learning Tools: PyTorch, TensorFlow, Scipy, sklearn
- Web Developement: FastAPI, Django, Flask, HTML, CSS, React
- Embedded Systems & Hardware: Microcontrollers (Arduino, ESP32), Single-Board Computers (Raspberry Pi)

LEADERSHIP EXPERIENCE

- Academic Board Member – Electrical & Electronic Eng Students Association, UMaT (2024/2025)
- Vice President – Aaenics UMaT Robotics Club (2024/2025)
- Microsoft Learn – Student Ambassador (2024)
- President – Young Christian Students, St Francis Xavier Jr Seminary (2020/2021)
- Team Lead – Team Tesla, Saint Francis Xavier Robotics Club (2020/2021)

PROFESSIONAL AFFILIATIONS

- IEEE (Institute of Electrical and Electronics Engineers) – Member (Aug 2023 – Present)
- SPE (Society of Petroleum Engineers) – Member (Aug 2023 – Present)
- GDSC (Google Developer Student Clubs) – Member (Mar 2022 – Sep 2025)

CERTIFICATIONS

- Software Engineering, Backend Specialization - ALX Africa (Jan 2024)
- Fundamental Quantum Computing - The Coding School + Google & MIT (2024)
- Quantum Developer Certification - Classiq Quest Bootcamp (2023)