





# Aaron Ontoyin Yin


AI/Software Engineer, Electrical and Electronics Engineering Student

AI Engineer with advanced expertise in Deep Learning, Generative AI, Data Science, Software Engineering, and Robotics. Proven track record as a Mathematics Olympiad participant and over three years of hands-on experience in Artificial Intelligence. Expert in Python with a strong command of advanced statistical methods. Committed to addressing complex challenges and driving innovation in the AI domain


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## TECHNICAL SKILLS

### Machine Learning

TensorFlow, PyTorch, Scikit-Learn, Xgboost, Imblearn, etc

### Artificial Intelligence

Deep Learning, Recurrent Neural Networks, Transformers, Natural Language Processing; Large Language Models/Computer Vision, Sentiment Analysis; Computer Vision; Object Detection, Image Segmentation, Image Classification

### Cloud Engineering

Microsoft Azure, Google cloud

**Data Engineering** Data Mining, MySQL, PostgreSQL, Big query, EDA

### Visualization Tools

Ms Excel, Matplotlib, Seaborn, Plotly/Plotly Dash, Echarts.js

### Web/Software Development

Streamlit, Dash, Django, Flask, Fastapi, HTML/CSS/Bootstrap/Tailwind CSS, js, Docker, Git/Github

### Programming Languages

Python, SQL, JavaScript, C/C++, MATLAB

### Quantum computing

Quantum theory, circuits, algorithms, cirq, classic



## EXPERIENCE

### AI Engineer

Vela Partners, San Francisco - USA

01/2024 - Present

Remote

*Vela Partners is the world's first product-led and AI-powered venture capital firm.*

- Developed robust APIs utilizing FastAPI to facilitate smooth communication among micro services.
- Designed and implemented synthetic customer chatbots, enhancing user engagement.
- Spearheaded AI-driven startup discovery, optimizing project outcomes.



## GENERAL SKILLS

Research and Problem-solving

Teamwork Analytical skills

Communication

Time management

Documentation

Critical thinking

Attention to detail

Adaptability Initiative

Tutoring/Teaching



## EDUCATION

### Software Engineering

ALX Africa

11/2022 - 01/2024

Online

Courses

- System Administration, Backend, Frontend, Databases, Research, Agile Development, DevOps, etc.



## EXPERIENCE

### Machine Learning Researcher, Intern

Suprcede, UK London

09/2023 - 08/2024

Remote

*Suprcede works with CEOs and founders to integrate and develop unique, efficient AI solutions for their businesses.*

- Contributed to crafting tailored language models utilizing pre-trained Large Language Models (LLMs) like OpenAI's Generative Pre-trained Transformers (GPTs).
- Carried out research about the design of the company's SaaS product for the best experience.
- Helped in the database structuring for the LLM and SaaS platform interactions.

### ML/AI Assistant Lead Engineer

Ideation Axis

05/2024 - present

Greater Accra, Ghana

*Provide full-stack technical support to help turn ideas into reality.*

- Instruct interns on AI concepts.
- Support the leadership of AI-related projects.

### Team Lead

Team Tesla, Xavier Robotics Club

08/2020 - 09/2021

Wa, Ghana

*A robotics club under the Ghana Robotics Academy Foundation*

- Taught robotics concepts to club members.
- Led development of competition tactics.
- Procured ev3 kits.

### Vice President

Aaenics UMaT

01/2024 - Present

Tarkwa, Ghana

*A multifaceted electronics and robotics club for connecting and training innovators*

- Teach microcontroller and AI classes.
- Guide newbies and beyond on programming fundamentals.
- Take part in club administrative activities.



## PROJECTS

### Customer Churn Prediction

- Using predictive modeling, I developed a customer churn prediction system using machine learning models on IBM's telco customer churn data. The models used were logistic regression, random forest, SVM, KNN, naive bayes, and XGBoost.
- I implemented a modular structure for efficient experimentation. I saved the most optimal models on precision, recall, and a balance between the two as pickle files, which were used for prediction in a Streamlit web app I created.
- Users could choose to prioritize recall, precision, or balance in the deployed Streamlit app.

## Electrical and Electronics Engineering

George Grant University of Mines and Technology

1/2022 - Present

Tarkwa, Ghana



## CERTIFICATES

### Software Engineer

**ALX Africa:** Low level programming, DSA, Web dev, DevOps

### Drillbotics Research

**SPE, DSATS:** Research skills, Python programming, data processing

### AI21 Labs Hackathon

**AI21 Labs:** Working with LLMs, Python programming, working with APIs

### Ghana Math Olympiad

**MISE Foundation:** Mathematical skills

### Team Tesla Lead

**Xavier Robotics Club:** Robotics, leadership skills

### Quantum Computing

**The Coding School [MIT]:** QxQ introduction to quantum computing



## ORGANIZATIONS

### IEEE (08/2023 - Present)

*Student member*

### SPE (08/2023 - Present)

*Student member*

## Advanced ML Pipeline for Network Intrusion Detection

- Developed a machine learning pipeline with feature extraction, dimensionality reduction, and SVM classification.
- Used Random Forest for feature extraction and PCA for dimensionality reduction.
- Implemented an SVM classifier with optimized kernel functions and hyperparameters. Integrated the pipeline using scikit-learn's Pipeline object for efficient and consistent data transformation.
- Evaluated pipeline performance using accuracy, precision, recall, F1 score, ROC curve, and AUC-ROC. Enabled probability estimation in SVM and analyzed the impact of varying decision thresholds on performance.

## Drillbotics Research

- A research competition among universities to solve directional drilling problems organized by DSATS-SPE. My team was the best in the directional drilling section in 2023.
- I used our research results to create a complete Python package for the purpose of building a drilling simulator, utilizing my expertise in the language.
- I created an interactive interface with Streamlit to keep an eye on the drilling operation and analyze the data that came from it.

## OSAD API (Object, Speech and Audio Detection)

- Built a test-driven, packed, and robust API that provides endpoints for converting speech to text and vice versa and object detection within images.
- The API securely manages user authentication with session tokens and password resets through email.
- Used Flask for the API development, Torch Vision's fasterrcnn\_resnet50\_fpn\_V2 model for object detection, SpeechRecognition for speech-to-text and pyttsx3 for text-to-speech. I managed audio formats with PyDub.

## Mini Attention

- Developed a novel attention mechanism from scratch using Pytorch's graphing system and tensors.
- Trained an English to French translator using this custom attention module.

## EASEChaos

- Together with other students, we built an app that extracts the timetable for any class from a general timetable that is always released by our university.
- I led the writing of the python script responsible for the extraction given and program and level. I also helped built the fronted interface using streamlit.
- I made use of pandas and openpyxl for the data manipulation.

Microsoft Learn Student Ambassadors (01/2024 - 07/2024)

*Student Ambassador*

GDSC (03/2022 - Present)

*Student member*



## INTERESTS

Deep Learning

Data Science

Teaching/Tutoring

Space exploration movies/series



## REFEREES

### Mensah Sitti

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### Philip Blewushie

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## NOTE

- **Additional projects:** I have worked on several other projects that are not listed here. I am happy to discuss these in more detail during an interview.
- **Referees on any project or experience available on request.**