Jeffrey Otoibhi

M.D | Aİ Engineer , Researcher

Seasoned AI Engineer/Researcher with a 5-year track record, delivering innovative AI solutions across different domains. Contributed to 5+ papers, demonstrating expertise in conducting research, problem-solving and staying abreast of AI advancements. A collaborative team player, adept at driving scalable AI solutions across diverse industries. Committed to pushing AI boundaries and driving innovation for meaningful societal impact through transformative AI solutions.

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Languages

English

Social networks

pauljeffrey

jeffreypaul

jeffreypaul

Assets

AI Research

ML system design and practices

Data Engineering and Model Training

ML deployment and Operations

ML Algorithms

Problem Modelling

Mathematics and Statistics

Leadership, Teamwork and collaboration

Work experience

Sienna Analytics Consulting — **Lagos**
AI Engineer, LLM & Generative AI — From October 2023 to February 2024

- Designed, developed and deployed advanced AI chatbot systems seamlessly integrating them into the business applications for 4 clients.
- Employed strategic prompt engineering approaches improving AI responses by 25%.
- Refactored, developed features for AI applications, reducing latency by 15%.
- Provided comprehensive technical support to over 20 client teams achieving a 95% resolution rate.

Fiverr, Upwork — **Online**
AI Engineer/Research — Since September 2019

- **Sign Language Video Generation:** Implemented, trained, evaluated a GAN model for pose generation and a U-Net based model for pose-image translation. MAE loss - 0.04
- **Energy Guided MEI Image Generation:** Finetuned a stable diffusion model using an energy function as a guide to generate most excitable inputs images (MEI).
- **JHU Image Crowd Counting (CNN based Uncertainty Guided Residual Learning):** assisted in its paper implementation for crowd density map (count) estimation.
- **Prediction of Neuronal Responses to Excitable Images (Macaque v4):** principal engineer in the development and training of a model (CNN Core + attention readout) for the prediction of neuronal responses in the visual field areas of monkeys. Correlation score - 0.27.
- **Multi-Modal Clinical Depression detection model :** 82% accuracy on DAIC-WOZ, a small, severely imbalanced dataset. Precision-0.69, Recall-0.7, F1-score-0.63 (weighted).
- **Brazilian semantic search and recommendation engine:** Principal architect of AI System that suggests optimal repair actions from customer complaints reducing the need for engineer support by 15%.
- **Personalized Prompt Learning for Explainable Recommendation (PEPLER) + Residual Prompt Reparameterization on LLMs**: collaborated in its implementation and training for prompt embeddings. DIV-3.55, FCR-0.11, BLEU-4 - 0.8197
- **Automatic post-edit (APE) translator with online adaptation :** collaborated in design, built and trained an APE model for English to Chinese, German, Spanish Neural Machine translations. Achieved a BLEU-4 score of 0.43, TER score- 0.66 on English to Spanish translations.

Interests

AI Research

Robotics

AI in Health Care, Finance

Economics

Chess

Fitness

Education

College of Medicine, University Of Lagos, — **Nigeria**
MBBS — From November 2011 to July 2018

Tech Stack/Skills

AI

- **Programming Languages:** Python, Javascript, Typescript.
- **Libraries/frameworks:** Pytorch, Tensorflow, Numpy, Jax, Langchain, Scikit-learn, Pyspark, OpenCV, Deepspeed, Ultralytics, Mediapipe.
- **Tools:** AWS, Redis, Postgresql, Docker, Git, Fastapi, Next.js, Vercel.

Certifications

Deep Learning Specialization (Andrew Ng)

Google TensorFlow Developer (Google ML 2022 Cohort)

Personal projects

Object Detection & Tracking Systems (computer vision)

- built a real-Time face, hand, object detection and tracking system.
- Real Time AI Virtual Mouse and Painter.

Medical Image Q&A System: "Thoughts are a beautiful combination of words."

- developed a unique model architecture prototype that can answer medical/radiological question about chest x-ray images.
- IU chest x-ray data was used. GPT 3.5 used to predict the most likely words for redacted text and also to generate question answer pairs.

YOLO V3

- Implemented its architecture, loss functions, data pipelines from scratch.

SabiYarn-125M (Naija-LLM)

- As the lead researcher, I developed a unique strategy for data collation and augmentation, a mixtral based model architecture and training technique for the enhancement of Language understanding and representation for Yoruba, Igbo, Hausa, Pidgin, English, Fulfulde, Fulah and Urhobo using LLMs.

Solana GPT

- Developed an innovative and autonomous AI system for Solana blockchain, capable of executing actions through natural language commands.
- Agent can fetch account, transaction, NFT details and signatures. Check balances and information on wallet addresses.

Drug Information Retriever

- Developed an NER based system to extract drug names and properties from a database based on user's query in natural language.

Cart Pole Game (Reinforcement Learning)

- Designed, Implemented a Deep Q network to solve the cart pole game problem using reinforcement learning (RL).