Ebenezer Kweku Gadri-Akrong

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EDUCATION

BSc. Computer Engineering   Kumasi, Ghana | Nov 2021
KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY (KNUST)

- Best graduating student out of over 400 students in the Department of Computer Engineering, KNUST.
- **First Class**: Recorded a Cumulative Weighted Average (CWA) of 83.11%

WORK EXPERIENCE

JLS TRADING CO. | FULLSTACK ENGINEER (REMOTE)   North Carolina, USA | Nov 2021 – Present

- Design and implement features for JLS ERP, an all-in-one SaaS product that enables Amazon Sellers to track warehouse or factory inventory, employees, and assets as pain-free as possible. A Platform with all relevant data in one spot, making Product management 10x faster.
- Led the efforts to automate and optimize warehouse processes for over a million products.
- Trained ARIMA models for sales forecasting, achieving accuracies over 93%.
- Implemented algorithms in Typescript for optimizing warehouse traversal when fulfilling pick lists to ease work for processors.
- Built a tool that helps the company and other sellers/companies set up, manage, and track its amazon campaigns with a foolproof process that consistently generates big monthly profits.
- Implemented algorithms to allow for automated adjustments to bids based on performance metrics, such as CTR, CPC, ACoS, and ROI.
- TypeScript, React, Redux, Express.js, Golang, Python, MySQL, PostgreSQL, MongoDB, GraphQL, REST/RESTful APIs, Git, Bash, Docker, GCP

IT CONSORTIUM | RESEARCH ENGINEER   Accra, Ghana | Oct 2021 – Sept 2022

- Work to implement an end-to-end smart camera system for recording the speed of vehicles, keeping track of staff and vehicles entering and leaving office premises, and automatically checking the validity of vehicle documents to improve office security.
- Designed and implemented custom efficient pipelines which act as the backbone for all smart camera use cases with NVIDIA DeepStream.
- Trained and fine-tuned models using the NVIDIA TAO Toolkit and compiled with TensorRT for usage in DeepStream pipelines to recognize faces of employees and detect vehicle information.
- Achieved an accuracy of approximately 91% on employee face data aof over 74% on open vehicle dataset.
- Designed and printed custom casing for smart camera units to provide protection from mechanical damage and electrostatic discharge.
- Implemented backend using Java Spring Boot for storing and organizing data for dashboard.
- Designed and implemented a dashboard using React and TypeScript to visualize data streamed from Kafka and stored in DynamoDB and access camera video streams via Amazon Kinesis for administrator usage.
- C/C++, Java Spring Boot, Python, TypeScript, NVIDIA Jetson, NVIDIA DeepStream, GStreamer, Kafka, AWS, React, 3D Printing, Edge Computing.

IT CONSORTIUM | RESEARCH INTERN   Accra, Ghana | Jun 2020 – Jan 2021

- Explored and did an extensive review of state-of-the-art techniques for Natural Language Processing.
- Trained a GPT-2 model in PyTorch on Amazon SageMaker, by taking state-of-the-art NLP models and applying transfer learning to interpret and process user's words and intelligently predict a suitable response. Achieved an accuracy of over 88%.
- Deployed the model as a chatbot for customer service that runs on WhatsApp using Java Spring Boot and cloud services from AWS (including DynamoDB, Amazon SQS, Amazon S3, Amazon EC2)
- Java Spring Boot, Python, JavaScript, AWS, Flask, PyTorch, React, REST/RESTful APIs, Git.

SOKO AERIAL, GHANA ARMED FORCES | Computer Vision Intern   Accra, Ghana | Jun 2019 – Aug 2019

- Built a quadcopter drone with Ardupilot using the Pixhawk4 Flight Controller.
- Trained a vehicle detection model using PyTorch for detection and counting of vehicles from orthophotos. Achieved accuracy of more than 60%.
- Developed an Autonomous Adaptive Traffic Control System based on Computer Vision.
- Developed a Traffic Counter for counting vehicles on roads and highways.
- Python, TensorFlow, PyTorch, Keras, OpenCV, Ardupilot, DJI Drones.

PROJECTS

NOTEBOOK.JS ⬈   React, TypeScript, Redux
A Jupyter-like browser-based coding environment for JavaScript.

NETFLIX ⬈   NextJS, TypeScript, GraphQL, Hasura
A Netflix clone built with NextJS.

TINYHOUSE ⬈   React, TypeScript, GraphQL, MongoDB, Stripe, GCP, Heroku
TinyHouse is a production-ready home sharing application, inspired by sites like Airbnb.

SOCIAL-DISTANCING-DETECTOR ⬈   Python, OpenCV
A social distancing detector built with OpenCV using YOLO(COCO model) object detector.

GODS-EYE VIDEO SURVEILLANCE SYSTEM ⬈   Python, Flutter, MySQL, Bash, Edge Computing
Video surveillance system that allows parents to access live feeds from Raspberry Pi based cameras in their wards' classrooms.

IMAGE-SEARCH-ENGINE ⬈   Python, OpenCV
A simple image search engine built from the concept of Content-Based Image Retrieval (CBIR) systems.

PING-PONG ⬈   C++/OpenGL
A ping-pong game including different difficulty levels.

VOLUNTEERING

- **The Coding Caravan - IT Consortium** Key member of the team involved in several initiatives to introduce emerging technologies to children between the ages of 6 and 15 years in rural communities and deprived government educational institutions in Ghana.
- Initiated and ran a successful 2 week Association of Computer Engineering Students (ACES) Developer Skills training program on the Python programming language, abstract data structures, problem solving techniques and algorithm optimization for 100+ freshman students in KNUST (2019).
- **National Science & Maths Quiz (2019)** Trained and mentored the winning team from St. Augustine's College at the National Competition.
- **National Science & Maths Quiz (2017)** Won the Regional Competition for the 2017 Edition and represented St. Augustine's College at the National Competition.