Papa Kobina Kwegyir-Aggrey

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Technical Skills

Languages: Python, C/C++, Matlab, SQL (Postgres), Bash, JavaScript/Typescript, HTML/CSS
Frameworks: Tensorflow, Pytorch, OpenCV, ROS2, Scikit-Learn, Numpy, Pandas, Keras, React
Developer Tools: AWS, Git, Docker, Kubernetes, Spark, Linux, Terraform, CloudFormation, Jira (Agile)

Experience

AI / Machine Learning Intern Sep. 2023 - Dec. 2023
EON Media

- Implemented **Docker** and **Kubernetes** to orchestrate a parallel pipeline to extract metadata from 500K+ videos.
- Designed a logo detection model using **PyTorch** and **OpenCV** enabling the identification and classification of various brand logos in video content.
- Employed **NLP** techniques, using **LLMs** like Pegasus and GPT, to analyze speech-based videos for generating concise summaries and suggesting compelling titles for audio transcription.
- Streamlined an **AWS** (EC2, EKS, ECR, Lambda, IAM) ML data pipeline architecture with scalable Docker deployments and an EKS cluster leading to a cost reduction of $15k/month.

Battery Pack Software Lead Sep. 2023 - Present
Battery Workforce Challenge(Stellantis) - Part time

- Employed **MATLAB, Simulink, and Simscape** to create and simulate circuits, simulating real-world data.
- Drafted a high voltage/Low voltage detailed circuit schematics for the BMS, outlining the circuit design and interconnections within the battery pack.

Computer Vision Engineer Sep. 2023 - Present
Watonomous - Part time

- Enhanced an autonomous car's navigation system by implementing a **ROS** node for traffic light detection, utilizing camera data analysis and image processing fine-tuning YOLOv8 with **Python** to achieve a precision of **93.3%**.

Data Science/ Machine Learning Intern Jan. 2023 - Apr. 2023
Volta Energy

- Engineered full-stack dashboard to view motor lifespan with **React** and **TypeScript**, reducing downtime by **90%**
- Developed **deep learning** models to predict motor lifespan and potential faults, resulting in savings of **$200k**.

Software Engineer Intern Nov. 2022 - Jan. 2023
JP Morgan & Co

- Leveraged **Spark, MapReduce,** and **Pandas** to efficiently process and analyze large complex stock data sets, resulting in the development of deep learning modules that significantly improved stock insights for traders.

Projects

Spam Classifier | *Matplotlib, Natural Language Toolkit, Seaborn, Pandas* | Link to Project

- Fine-tuned the **Multinomial Naive Bayes** model using the **TfidfTransformer** to classify spam messages from genuine messages with an accuracy of 95%.

Loan Prediction | *Python, Scikit learn, pandas, Git* | Link to Project

- Implemented and compared results of both **decision tree** and **random forest** algorithms to accurately predict the probability of individuals paying off their loan.

Customer Churn | *Matplotlib, Scikit learn, Seaborn, Pandas* | Link to Project

- Developed a **neural network** with a binary crossentropy loss function to predict the likelihood of a customer returning.

Battery and Motor Temperature Prediction | *Python, Tensorflow, Pandas* | Link to Project

- Analyzed electrical data and built a **linear regression** model to predict motor temperature with **98%** accuracy.

Education

University of Waterloo Waterloo, On
Candidate for B.A.S.c in Computer Engineering *Sep. 2022 – May 2027*