AHMED SALIM

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EDUCATION

Universiti Teknologi Malaysia — Johor Bahru, Malaysia
Master of Science in Data Science — *Mar. 2022 – Mar 2024*

Future University — Khartoum, Sudan
Bachelor of Engineering in Electrical and Electronics — *Aug. 2013 – May 2018*

EXPERIENCE

Freelance Data Scientist — Aug. 2024 – Present
Upwork · Remote

- Delivered ML solutions for clients, including NLP pipelines, computer vision models, and data analysis workflows
- Developed a neural network for medical imaging that uses multi-scale feature extraction and global pyramid fusion, achieving 99.5% accuracy and 96.7% sensitivity in choroidal layer segmentation of OCT images
- Implemented RAG frameworks using LangChain for enterprise chatbots
- Applied LSTM, entropy-based feature selection, and bootstrap analysis to classify Autism Spectrum Disorder, combining Facial Emotion Feature Extraction and gaze detection models. Integrated AI with Human-in-the-Loop (HITL) methods to refine the model with human annotations

Machine Learning Engineer (Internship) — Aug 2024 – Jan 2025
STEM-Away · Remote, USA

- Led a team of 7 to develop GDAP, a Gene-Disease Association Prediction pipeline using graph-based representations (NetworkX) and node embeddings
- Integrated disease targets from the Open Targets Platform (EFO) and Protein-Protein Interaction (PPI) data from the STRING database
- Engineered a Streamlit app for model training and prediction analysis, reducing manual effort by 40%
- Experimented with edge feature engineering and link prediction algorithms (e.g., Node2Vec, GCN)

Graduate Research Assistant — Mar. 2023 – Feb. 2024
Universiti Teknologi Malaysia · Johor Bahru, Malaysia

- Contributed to SAM, a vision transformer with HSV color thresholds for leaf disease detection; improved segmentation accuracy by 18%, and fine-tuned VGG16 via transfer learning, achieving 99.44% classification accuracy
- Published a book chapter on AI for plant disease detection in a UTM-published academic volume

PROJECTS

Multi-Modal Image Captioning | *Python, PyTorch, COCO/Flickr* — Dec. 2024

- Trained a transformer-based model to generate captions from multi-modal inputs (image + text)
- Achieved a BLEU-4 score of 0.18 on the COCO dataset, evaluated on a partial subset due to computational constraints

Unlocking SQL with Generative AI | *Python, Streamlit, Gemini Flash* — Nov. 2024

- Convert natural language to SQL using AI - reduced errors by 30% with schema checks & RAG validation
- Deployed a user-friendly app (Streamlit) showing real database results retrieval
- Won Ready Tensor Expo 2024 competition; shared code publicly on GitHub

3D Medical Image Segmentation | *Python, TensorFlow, MONAI* — Sep. 2024

- Built a U-Net 3D image segmentation model for MRI, achieving a Dice score of 0.99 and a mean IoU of 0.90 on the BraTS dataset.

Multi-Task Human Action Recognition | *Python, TensorFlow, Keras* — Sep. 2024

- Implemented a multi-task model for human action recognition (40 classes) and person count (binary) using TensorFlow and Keras, experimenting with pretrained models, fine-tuning, and dual output layer configurations

TECHNICAL SKILLS

Languages: Python, SQL (Postgres, MySQL), R, JavaScript, HTML/CSS
ML Frameworks: PyTorch, TensorFlow, Keras, Hugging Face, LangChain
Tools: Git, Docker, Streamlit, FastAPI, OpenCV, AWS/GCP, LaTeX
Libraries: pandas, scikit-learn, NumPy, Matplotlib, NetworkX, MONAI
Areas: Computer Vision, NLP, Graph ML, Generative AI, MLOps

AWARDS

- *Outstanding Solution Guide, in NLP Projects Expo 2024* — Nov. 2024
- *Level 1 Top Performer, of the EY Open Science Data Challenge 2023* — May 2023