

Ahmed Salim

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EDUCATION

University Technology Malaysia

Master of Science in Data Science

Johor Bahru, Malaysia

Mar. 2022 – Mar 2024

Future University

Bachelor of Engineering in Electrical and Electronics, Minor in communication

Khartoum, Sudan

Aug. 2013 – May 2018

EXPERIENCE

Machine Learning Engineer

STEM-Away

July 2024 – Present

Remotely, USA

- Led a team of 7 international students to develop GDAP, a Gene-Disease Association Prediction pipeline and a Streamlit app for model training and prediction analysis
- Fetched gene-disease data using EFO from the Open Target Platform and Protein-Protein Interaction data from the STRING database
- Constructed a bigraph with NetworkX to identify positive/negative edges and merged datasets for analysis
- Experimented with multiple algorithms for node embeddings, graph structure capture, and edge feature engineering

Graduate Research Assistant

Universiti Teknologi Malaysia

Mar. 2023 – Feb 2024

Johor Bahru, Malaysia

- Developed a deep learning-based solution for automating tomato plant disease detection using advanced image segmentation
- Enhanced the vision transformer, Segment Anything Model (SAM) with HSV color thresholds and OpenCV to improve segmentation accuracy for tomato leaf images
- Fine-tuned VGG16 via transfer learning, achieving classification accuracy of 99.44%
- Developed a FastAPI web interface for plant disease detection, enabling instant image segmentation and classification
- Published a book chapter in *Artificial Intelligence for Segmentation, Identification, and Interaction*, highlighting advanced techniques for plant disease detection using HSV color models and SAM

PROJECTS

Unlocking SQL | *Python, MySQL, Generativeai, Streamlit*

Nov. 2024

- Published research on transforming natural language into SQL queries using Generative AI, making database querying more accessible for non-technical users
- Explored two techniques: schema inference with prompt engineering and Retrieval-Augmented Generation (RAG) to reduce hallucinations and enable LLMs to generate accurate SQL queries
- Developed a Streamlit app for demonstration and provided both code and the research paper for public use

Multi-Model HAR | *Python, TensorFlow, Keras*

Sep. 2024

- Developed a multi-task functional model for two tasks. To classify actions across 40 classes (multi class), and to determine if more than one person is in the image (binary).
- Experimented with various pretrained models, using fine-tuning and transfer learning techniques
- Implemented different output layer configurations, including simple dense layers, branching layers, shared features, and common branches for multi-task learning

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL (Postgres, MySQL), JavaScript, HTML/CSS, R

Frameworks: React, Node.js, Flask, FastAPI, Django, FastAPI

Developer Tools: Git, Docker, TravisCI, Google Cloud Platform, VS Code, Visual Studio, PyCharm, WSL, LaTeX

Libraries: scikit-learn, tensorflow, torch, transformers, pandas, numpy, matplotlib

AWARDS

- Outstanding Solution Implementation Guide, in *NLP Projects Expo 2024*

Nov. 2024

- Top performer at Level 1, of the *EY Open Science Data Challenge 2023*

May 2023