HASHARA VIDUSANKA

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ABOUT ME

I am an undergraduate in Faculty of Engineering, University of Ruhuna. I am also following a Computer Engineering Degree Program. I would love to apply my knowledge in computer engineering, and develop my skills within the industrial context. I am a keen learner who is always willing to learn something new and adapt myself in any new environment, while gaining ample knowledge when working as a team.

Experience

Sri Lanka Telecom (SLT), AI/ML Engineering Trainee

Head Office, Lotus Road, Colombo 01
Aug 2024 – Feb 2025

- Contributed to the development of an AI-powered chatbot for LECO, designed to enhance customer interactions and handle solar system installation queries.
- Implemented a Retrieval-Augmented Generation (RAG) architecture, integrating retrieval-based and generative AI techniques for context-aware responses and improved accuracy.
- Developed a multilabel intent classification model using Random Forest and TF-IDF vectorization, optimizing performance with Grid Search and Cross-Validation.
- Utilized FastAPI, LangChain, HuggingFace, FAISS, BM25, NumPy, PyPDFLoader, and Uvicorn for the RAG pipeline.
- Performed data visualization and model performance analysis using Matplotlib and Seaborn.

TECHNICAL SKILLS

AI/ML & Data Science: Deep Learning (CNN, RNN, Autoencoders), Retrieval-Augmented Generation (RAG), Multilabel Classification, Image Processing, Data Visualization, Experiment Tracking (MLflow, Optuna)

Frameworks & Libraries: TensorFlow, Keras, PyTorch, OpenCV, scikit-learn, Streamlit, LangChain, HuggingFace, FastAPI, React.js, Node.js, Flutter, WPF, Spring Boot

Languages: Python, C++, C#, Java, JavaScript, Dart, SQL

Technologies & Tools: AWS, Docker, Terraform, DBMS, FAISS, BM25

Concepts & Practices: AI/ML Model Deployment, Design Patterns, Data Structures & Algorithms

Operating Systems: Windows, Linux

Version Control & Collaboration: GitHub, Jira

UI/UX Design Tools: Figma

Adobe Software: Adobe Photoshop, Adobe Premiere Pro, Adobe Audition

Research Project (Ongoing)

Hybrid Deep Learning and Optimization-Driven Multipath Flow Routing in Software-Defined Vehicular Networks - Group Project

Research Details

- **Description:** Developed a novel framework combining deep learning and optimization techniques for efficient multipath flow routing in highly dynamic vehicular networks. Implemented network simulations using NS3 and designed models addressing link lifetime uncertainty, energy efficiency, and flow interactions in SDVNs.
- **Skills:** Machine Learning & Deep Learning, Non-Linear Mathematical Optimization, Network Simulation & Modeling, Algorithm Development & Research

PROJECTS

Traffic Flow Clustering - Group Project *2025* Repository Link

- **Description:** Built an AI-powered solution to classify urban traffic flow using Convolutional Autoencoders and clustering on SUMO-simulated data.
- Implemented MLflow, Optuna, and FastAPI for experiment tracking, optimization, and automated reporting.
- Designed an interactive Streamlit dashboard integrated with a Gemini-powered chatbot for visual analytics and decision support.

Parking Spot Occupancy Detection Using Computer Vision and CNN Repository Link
Group Project *2025*

- **Description:** Developed a real-time smart parking system using Computer Vision and CNN to classify parking spot availability from video feeds.
- Applied ROI-based change detection for improved computational efficiency.
- Implemented using Python, OpenCV, NumPy, TensorFlow/Keras, scikit-learn, and Matplotlib for accurate and scalable deployment.

AI-Driven CAPTCHA Detection Model - Group Project *2024* Repository Link

- **Description:** Developed a robust CAPTCHA recognition system using CNN and RNN with TensorFlow and Keras in Python.

Potato Disease Classification Model *2024* Repository Link

- **Description:** Developed a CNN using TensorFlow and Keras to classify potato diseases from leaf images.

Smokers and Drinkers Predictor - Group Project *2023* Repository Link Research Paper

- **Description:** Developed a machine learning model using Logistic Regression and SVM in Python to predict individuals' smoking and drinking behavior.

EDUCATION

BSc. Hons **Faculty of Engineering University of Ruhuna**, Computer Engineering (UG) 2021 – Present

- 7th semester completed.

A/L **Dharmaraja College, Kandy** — GCE A/L Examination (Passed) 2016 – 2018

CERTIFICATES

Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate Certificate Link

- **Issued by:** Oracle
- **Description:** Introduces fundamental concepts of AI and ML.

REFEREES

Dr. Nilmantha Wijesekara

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  Faculty of Engineering, University of Ruhuna.
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