Chanuka Dasun

Trainee AI/ML Engineer

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I am a third-year Information Technology undergraduate at the University of Moratuwa, passionate about transforming data and intelligence into real-world impact. With a strong foundation in Machine Learning, Deep Learning and Natural Language Processing, I enjoy building intelligent systems that bridge the gap between research and application. My experience spans hands-on projects in computer vision, predictive modeling and data-driven decision systems, where I've applied theory into practice to solve meaningful problems. I'm currently exploring how AI can empower communities through accessible and ethical technology-driven by curiosity, creativity and a commitment to continuous learning.

EDUCATION

University of Moratuwa - Sri Lanka 2023 – Present
BSc (Hons) in Information Technology
CGPA: 3.57 / 4.0

Badulla Uva College - Sri Lanka 2019 – 2021
GCE Advanced Level – Physical Science
Results: AAB | Z-Score: 1.8625

TECHNICAL SKILLS

- **Machine Learning & Deep Learning:** TensorFlow, PyTourch, Keras, Scikit-learn
- **RAG & Agentic AI:** FAISS, ChromaDB, Weaviate Cloud, LangChain, LangGraph, LangSmith
- **Data Science & Analytics:** NumPy, Pandas, SciPy, Matplotlib, Seaborn, Plotly, Statsmodels
- **Programming Languages:** Python, C, C#, Java, JavaScript
- **Web Development:** FastAPI, .NET, Node.js, React, Next JS
- **MLOps & DevOps:** Docker, GitHub Actions, CI/CD Pipelines, Git
- **Databases:** PostgreSQL, MSSQL, MongoDB
- **Cloud Platforms:** Microsoft Azure, Azure AI Studio
- **Development Environments:** Jupyter Notebooks, Kaggle, Google Colab, Linux (Ubuntu)
- **Additional Tools:** Raspberry Pi, Tesseract OCR, LaTeX

PROJECTS

Vehicle Faults Prediction System – **Neural Network for Real-Time Engine Fault Detection** github
- **Description:** Developed an intelligent vehicle diagnostics system capable of predicting potential engine faults in real-time using data collected from an OBD-II interface. The system integrates Neural Network to analyze sensor data and detect early signs of mechanical issues, improving vehicle reliability and safety through proactive fault detection.
- **Key Features:**
  - Real-time vehicle parameter collection using Raspberry Pi and OBD-II interface
  - Data preprocessing and feature extraction from 12 key engine parameters
  - Neural network model for early detection of potential faults
- **Technologies :** Python, TensorFlow, Raspberry Pi, OBD-II, CAN Bus
- **Role:** Designed and implemented the neural network model for engine fault prediction

TrainerScores – **AI-driven RAG Application for Trainer Certificate Evaluation**   github
- **Description:** TrainerScores is an AI-driven RAG application that evaluates personal trainers' certificates to generate credibility scores and reasoning automatically. It extracts text from uploaded certificates using OCR (Tesseract) and processes it through an LLM-based reasoning pipeline (LangChain) to assess the trainer's qualifications, experience and authenticity.
- **Key Features:**

  – Automated certificate text extraction using OCR (Tesseract)
  – Context-aware evaluation using LangChain + Gemini + Weaviate (vector database)
  – Modular FastAPI backend for upload, reading, and scoring
  – Interactive React frontend with real-time score and reasoning display

- **Technologies :** LangChain, FastAPI, Python, Weaviate Cloud, UploadCare, React, Ant Design
- **Role:** Designed and developed RAG chain with fast API backend and interactive UI.

AskMyDocs – **AI-powered RAG System for Automated Question Generation (Ongoing)**   github
- **Description:** AskMyDocs is an AI-powered Retrieval-Augmented Generation (RAG) application that allows users to upload documents and automatically generates contextually relevant questions based on the document content. The system combines document embeddings with large language model reasoning to create study or assessment questions dynamically.
- **Key Features:**

  – Secure document upload and parsing using FastAPI backend
  – Context retrieval using Chroma vector database for semantic search
  – Question generation powered by LangChain + Gemini models
  – React frontend with real-time preview of uploaded files and generated questions

- **Technologies :** LangChain, FastAPI, Python, Chroma, React, ShadCN UI
- **Role:** Designed and implemented the complete RAG pipeline, document ingestion, context retrieval and LLM-based question generation with an interactive web interface.

LearnSphere – **Modern Learning Management System**   frontend | backend
- **Description:** Designed and developed a role-based Learning Management System supporting teachers, students, and administrators with features for course material management, assignments, grading, and analytics. The system promotes seamless collaboration and performance tracking across all roles.
- **Key Features:**

  – Secure file upload and retrieval using the File Storage Module (UploadCare)
  – Real-time analytics dashboards for student performance and activity insights
  – Modular architecture following Microservices design principles
  – Internal REST API communication between backend services for scalability

- **Technologies :** .NET Core, React, MSSQL, Azure, REST APIs, UploadCare
- **Role:** Full Stack Developer — implemented the File Storage and Analytics modules, ensuring secure file handling, efficient service integration, and insightful data visualization.

LICENSES & CERTIFICATIONS

- **Supervised Machine Learning: Regression and Classification** – DeepLearning.AI   Credential
- **Developing Back-End Apps with Node.js and Express** – IBM   Credential
- **Introduction to Software Engineering** – IBM   Credential

REFERENCES

Alfred Edwin   **Dilumika Nawodya**
Senior Software Engineer   PhD Candidate
IFS   Oregon State University
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