



Pabasara Karunarathna

AI/ML Intern

📍 RavinduPabasara

📁 Portfolio - Muses by Pabasara

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Profile

Enthusiastic 3rd year BSc (Hons) in Artificial Intelligence undergraduate of University of Moratuwa, with hands-on experience in machine learning, computer vision, RAG application development, and time series forecasting. Skilled in mobile and web application development and design. I actively contribute to technical discussions through articles on Medium, sharing insights on AI and programming. I believe in continuous growth and enjoy experimenting with new technological tools. I am an adaptive, collaborative team player with a strong desire to learn and contribute to projects that challenges me.

Education

- **University of Moratuwa, Sri Lanka** (2022 - 2026)
B.Sc. (Hons) in Artificial Intelligence (CGPA : 3. 43)
- **St. Thomas College, Matara, Sri Lanka** (2020)
G.C.E A/L: Physical Science Stream

Technical Skills

- **Programming:** Python, Java, C
- **Machine learning and Deep Learning:** TensorFlow, PyTorch, scikit-learn, XGBoost, matplotlib, ARIMA, Prophet
- **NLP:** NLTK, Hugging Face Transformers
- **Databases:** MySQL, MongoDB
- **Web Development:** FastAPI, ReactJS, Figma
- **Mobile Development:** Flutter
- **LLM Tools:** LangChain, Llamaindex, Sentencepiece
- **Computer Vision:** Keras, OpenCV, YOLO, sk-Fuzzy

Non-Technical Skills

- **Problem Solving:** Strong problem-solving skills and creative thinking.
- **Communication:** Fluent in English and Sinhala.
- **Teamwork:** Active contributor to university and faculty events and projects.
- **Organizing:** Helped organize 3 successful blood donation programs.
- **Writing:** Proficient in both professional and creative writing in English and Sinhala. Wrote for the MSU editorial team. Authored a research paper on leveraging AI for education.

Projects

Voicense Lecture Note Generation App (Team)

 GitHub

- Developed a mobile app for level 2 software project that generates lecture notes using Langchain and Retrieval-Augmented Generation (RAG). Built with Flutter (Frontend) and FastAPI (Backend).
- Technologies: Flutter, FastAPI, LangChain, MongoDB

StumblePanni: Tech-Triathlon 2024 Winner (Team)

Rootcode

- Developed a Hybrid Optimization Recommendation Engine combining semantic similarity, geographical clustering, and multi-factor scoring for diverse, scalable travel suggestions. Also Contributed to concept design and User Interface.
- Technologies: Python, DBSCAN, Sentence Embeddings, Gemini API

LLM - Powered Brainstorming and Automation MAS Framework (Individual)

 GitHub

- Developed an LLM - powered brainstorming framework using multi-expert agents to automate collaborative ideation and solution implementation.
- Technologies: Python, OpenAI API, NLTK, Multi-threading, Multi-agent Systems

Sinhala Fine-Tuned distilGPT-2 (Individual)

 GitHub

- Fine-tuned a distilGPT-2 model for generating Sinhala text using XLM-Roberta tokenizer and a translated Alpaca dataset.
- Technologies: PyTorch, LLMs, Hugging face Transformers

Additional Projects

- **Project Greendome (Team)**: Indoor plant caring system using ESP32 and Keras for Disease Detection.
- **MAS Swarm Collaboration (Individual)** : A multi-agent swarm simulation to model collaboration 
- **Drought Prediction Tool (Individual)** : Prophet based time series analysis to forecast droughts 
- **Study Assistant (Individual)** : RAG-based study tool for document analysis and memory mapping. 
- **Sinhala Custom Tokenizer (individual)** : A Sentencepiece tokenizer model for the Sinhala language. 

Publications

- *Voicense: AI-Powered Lecture Note Generation Tool*. Presented at the 9th International Conference on IT Research (ICITR) 2024. **IEEE Xplore**

Achievements and Extracurricular Activities

- A member of the winning team in Tech-Triathlon 2024 organized by Rootcode.
- Participated in Predicta 1.0 Datathon competition, MoraXtreme 8.0.
- Passionate about poetry, digital art, reading, sketching, and character design.
- Won all-island certificates in art competitions and a Former member of school athletics team .

References

- **Dr. Thilini Piyatilake**
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- **Mr. Charith Bimsara**
Machine Learning Engineer, Rootcode AI
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