Lingeswaran Sathiyalokeswaran

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About Me

I am a 4th-year undergraduate engineering student at the University of Moratuwa, moving my career path toward machine learning and AI as a Machine Learning Engineer.

Education

University of Moratuwa (2021–Present)
B.Sc.Eng (Hons), Electrical Engineering

J/Mahajana College (2006–2018)
Advanced Level: 3A in Physics, Chemistry, and Combined Mathematics

Skills

- **Languages**: English (Professional), Tamil (Native), Sinhala (Intermediate)
- **Programming**: Python (NumPy, Pandas, Matplotlib, Scikit-learn, OpenCV), Java, C++, HTML/CSS/JS, PHP
- **Machine Learning AI**: Deep Learning, Natural Language Processing (NLP), Model Fine-tuning, Hugging Face Transformers, Speech-to-Text, Speech Recognition
- **Tools and Frameworks**: Hugging Face, TensorFlow, PyTorch, Jupyter Notebooks

Certificates

- **Machine Learning Specialization**: Stanford University (Supervised Learning, Advanced Learning Algorithms, Unsupervised Learning, Python for ML)
- **Management**: Business Analyst Project Certification

Projects

- **Tamil Language Voice-to-Text Model (Python, Hugging Face, Whisper)**: Fine-tuned the Whisper small model on the Common Voice 11.0 dataset for Tamil speech-to-text transcription. The model, available here, is designed for real-time Tamil language transcription and language identification with improved accuracy and reduced error rates, achieving a loss of 0.2150 and a WER of 43.3196 on the evaluation set.
- **Restaurant Scenario Chatbot (Python, Hugging Face, LLaMA 2, LoRA)**: Fine-tuned the LLaMA 2 model for a restaurant scenario chat using a 1000-question answer dataset, applying the LoRA technique. The model is still being refined to meet the expected accuracy for restaurant-related interactions.
- **Real-time Customer Identification Model (Python, YOLOv8, OpenCV)**: Developed a real-time YOLOv8 model for customer identification in a restaurant scenario.
- **Potato Disease Classification Project (Python, TensorFlow)**: Designed a CNN model to classify potato diseases from leaf images and evaluated using precision, recall, and F1 score metrics.
- **Snake Game (C++, PlatformIO, Wokwi, ILI9341 Display, Joystick)**: Developed a classic Snake game using C++ and PlatformIO in VS Code, integrating joystick controls for smooth directional movement. Simulated the game on the Wokwi platform with an ILI9341 display.
- **Customer Feedback Submission Form (HTML, CSS, JavaScript, SQL, PHP)**: Developed a small webpage to collect customer feedback for a company, using HTML, CSS, JavaScript for the frontend, and SQL and PHP for backend functionality to store and process feedback.
- **Real-time Color Detection and Tracking System (Python, OpenCV)**: Developed a real-time system to detect and track objects of a selected color with a custom color picker and HSV-based dynamic thresholding.

Volunteering

- Final Year Batch Representative, Department of Electrical Engineering, University of Moratuwa.
- All-Island Coordinator for MORA Exams 2022, managing coordination across 18 districts.
- Resource Person for pre-engineering classes for A/L graduates.
- Batch Representative, Moratuwa Tamil Literary Association.

Work Experience

- **Trainee Electronic Engineer**, Vega Innovations (Nov 2023-May 2024): Worked on PCB design, firmware development, and hardware debugging.
- **Combined Mathematics Teacher** (2020-2022): Taught Advanced Level Mathematics in Jaffna.

Awards And Achievements

- Varsity Battles Cluster Winners, conducted by the Colombo Stock Exchange and SEC, representing the University of Moratuwa (2024)
- Top 10 Announcers, All-Island MORA Lenz Media Awards 2023.
- Mahajanan Awards for Academic Excellence (2021).
- Mahapola Merit Scholar (2021).

References

Prof. Buddhika Jayasekara
Professor, Dept. of Electrical Engineering, University of Moratuwa
buddhikaj@uom.lk