ISHAN KUMARASINGHE

COMPUTER ENGINEERING UNDERGRADUATE

+94 762813836 | thathsaraishan@gmail.com | /in/ishan-kumarasinghe

PROFILE

Final year Computer Engineering undergraduate specializing in DevOps, Machine Learning and Artificial Intelligence. Experience ranges from simple user applications to Deployable production level applications, in both collaborative and individual settings. Comprehensive experience in DevOps methodologies (CI/CD, Cloud Deployment) and ML tools. Seeking an internship to apply technical skills in building efficient, user-centric systems.

EDUCATION

BSc Eng Hons specializing in Computer Engineering (UG) **2022 - Present**
University of Peradeniya

- Current GPA: 3.68/4.0

TECHNICAL SKILLS

- Languages: Python, Java, C++, SQL, C, JavaScript, TypeScript, Dart, Ballerina
- DevOps: Git, GitHub, Linux, Docker, Jenkins, Ansible, Terraform
- ML frameworks: Scikit-learn, PyTorch, TensorFlow
- Libraries & Tools: OpenCV, Trello, Keras, MLflow

PROJECTS

Synthetic Cardiac MRI Image Generation using Deep Generative Models | *Research* | link **Aug 2025 - Present**
Tech Stack: Python, PyTorch, MONAI, Diffusers

Synthetic Cardiac MRI Image Generation from Diffusion and Flow matching Deep Generative Models using limited publicly available data.

My contribution:

- Generate synthetic multi labeled masks to condition the deep generative models.
- Build conditional Diffusion models to generate synthetic cardiac MRI.
- Evaluate generated synthetic images on Fidelity to measure the quality and Privacy to preserve patient privacy.

SMART AGRICULTURAL MONITORING SYSTEM | *Group* | link **Dec 2024 - Jul 2025**
Tech Stack: YOLO, FastAPI, Docker, GCP, Firebase, Platform.io, MQTT, Flutter, React

IoT solution to collect real-time location-based data and analyze it to optimize farming practices.

My contribution:

- Built a dockerized YOLOv5 tree health monitoring service using FastAPI, deployed on GCP Cloud Run with automated CI/CD pipelines for seamless updates.
- Developed a mobile and web apps fully integrated with Firebase services and Cloud Storage.
- Collected IoT sensor data via ESP32 microcontroller and stored in Firestore using MQTT.

Event-Driven, Dockerized To-Do Application | *Individual* | link **Dec 2025 - Feb 2026**
Tech Stack: Docker Compose, React, Node.js, MySQL, RabbitMQ, AWS

A production-style full stack app with event-driven backend and containerized deployment.

- Implemented asynchronous event-driven architecture using RabbitMQ.
- Orchestrated production-ready containers via Docker Compose.
- Configured cloud-ready deployment patterns for AWS.

STUDENT PERFORMANCE ANALYZER | *Individual* | link **Jun 2025 - Aug 2025**
Tech Stack: : Python, Scikit-learn, Jupyter Notebook

Predicting student subject performance using bagged Random Forests on merged demographic and performance data.

- Optimized grade prediction using Bagging Ensembles and Random Forest regressors.
- Created unified dataset using Mutual Information for optimal feature selection.
- Built end-to-end regression ML pipeline processing complex demographic features.

AIR QUALITY ANALYZER | *Group* | link **Oct 2024 - Feb 2025**
Tech Stack: : Python, TensorFlow, Scikit-learn, Scikit-Fuzzy

Forecasting air quality using a hybrid LSTM and Fuzzy Logic model to capture nonlinear patterns.

My contribution:

- Created a novel architecture integrating LSTM neural networks with a Fuzzy Logic System, and reduced prediction error.
- Processed complex datasets using advanced data cleaning, outlier detection & MinMax scaling.
- Connected the ML model into a user-friendly web application using Flask.

ACHIEVEMENTS

Undergraduate Inventor of the Year (UIY) 2025 Nominee | IESL **2025**
Third-Year Project Smart Agriculture Monitoring System submitted to the competition organized by the Institution of Engineers, Sri Lanka (IESL).

ENGEX 75th Anniversary Exhibition Showcase | University of Peradeniya **2025**
Smart Agriculture Monitoring System project selected for display at the SMART CITY zone by Peracom, celebrating the Faculty of Engineering's 75th anniversary.

Innovate with Ballerina Coding Challenge | IEEE UoM & WSO2 **2024**
"Book My Doctor" project selected for the coding challenge held from September to November 2024.

CERTIFICATION

- 100 Days of DevOps - KodeKloud
- Advanced Learning Algorithms - DeepLearning.AI
- AI Free Week Course - KodeKloud
- Generative AI: The Evolution of Thoughtful Online Search - LinkedIn

RELEVANT COURSEWORK

- Probability & Statistics
- Advanced topics in Networking
- Computer & Network Security
- Network & Web Application Design

REFERENCES

Dr.Isuru Nawinne
Senior Lecturer / Project Advisor
Department of Computer Engineering
Faculty of Engineering - University of Peradeniya
Phone: +94 718495506
Email: isurunawinne@eng.pdn.ac.lk

Ms. Yasodha Vimukthi
Lecturer
Department of Computer Engineering
Faculty of Engineering - University of Peradeniya
Phone: +94 719764671
Email: yasodhav@eng.pdn.ac.lk

ADDITIONAL INFORMATION

- Github : https://github.com/ishann211
- Hackerrank : https://www.hackerrank.com/profile/e20211