

Rusiru Anupama Rasanjana

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SUMMARY

Third-year Electronic and Telecommunication Engineering undergraduate at the University of Moratuwa, deeply passionate about applied and fundamental research in computer vision, deep learning, and robotics.

Focus Areas: Computer Vision, Deep Learning, Embodied AI, Robotics

EDUCATION

University of Moratuwa

BSc Eng (Hons) in Electronic and Telecommunication Engineering; **GPA: 3.89/4.00**

Colombo, Sri Lanka

Mar 2024 – Present

Mahinda College

G.C.E. Advanced Level (Physical Science Stream); 3A Distinction Passes; Z-score: **2.3749**

Galle, Sri Lanka

Mar 2009 – Aug 2023

PROJECTS

MotorSense: Anomaly Detection using Autoencoders (Machine Learning) | [GitHub](#) Self-Initiated Project

- Built a PyTorch-based predictive-maintenance pipeline for motor and bearing vibration anomaly detection.
- Trained dense and Conv1D autoencoders on healthy vibration windows using raw time-domain and FFT log-magnitude features.
- Implemented dataset preparation, validation-based anomaly thresholds, evaluation plots.

LumonBot - 6 Axis Cable Driven Parallel Robot (Robotics, Embedded) | [GitHub](#) Completed

- Building a cable-driven parallel robot with multi-actuator coordination.
- Worked as Team Leader, Architected the subsystems, CAN communications and designed Actuator PCB.
- Worked workspace analysis and trajectory planning to improve motion precision and stability.

Omni-directional Mecanum Wheeled Robot (Robotics) | [GitHub](#) Completed

- Developing a mecanum-drive mobile robot with omni-directional motion control and navigation-oriented drive logic.
- Individual Contribution : Implemented a ROS2 and Gazebo simulation for initial LIDAR scanning and planning.

N1K0 - Micromouse Robot (Robotics, Signal Processing) | [GitHub](#) Completed

- Developed the N1K0 micromouse robot for maze exploration, wall detection, and fast-run optimization.
- Developed circuitry for a 6-axis IMU and applied sensor-fusion techniques such as Kalman filtering.
- Worked on sensor feedback processing and calibration to reduce sensor noise.

ECG Arrhythmia Detection (Applied Machine Learning, Signal Processing) | [GitHub](#) Completed

- Contributed to an ECG arrhythmia detection project focused on machine learning-based cardiac signal classification.
- Personal contributions: changed the base model from ResNet101 to EfficientNet-B0 to improve inference performance, and implemented SMOTE and Focal Loss to address dataset class imbalance.

Robotic Design Competition (Robotics) | [GitHub](#) Completed

- Contributed to robot design, subsystem integration, and implementation for the EN2533-based competition.
- Collaborated on sensor–software interfaces to improve system reliability during competition tasks, mainly working on grid navigation and BFS-based path planning.

SmartSense: Motion Based Auto Shut-off Device (Embedded, Electronics) GitHub	Completed
- Developed an MPU6050-based motion-sensing auto shut-off system, integrating sensor interfaces, control logic, and hardware–software workflows. - Individual: Designed Power PCB, User Panel PCB using Altium. Developed firmware using RTOS. - Implemented device-level testing and iterative debugging to improve sensing consistency and control response.	
Elderly Assistance System (New Invention, Electronics)	KIYO - 4I
- Led development of the “Easy Controller for Daily Life” while my design was a sound base method for guide blind elderly through day to day life. - Led the team and received a Silver Medal at the Korea International Youth Olympiad 4I 2017.	

PROFESSIONAL EXPERIENCE

Mettabyte	Colombo, Sri Lanka
<i>Machine Learning Engineering Intern</i>	<i>May 2023 – Jun 2024</i>
- Designed and implemented an LLM-based matching workflow for job descriptions and resumes. - Built TF-IDF retrieval and ranking pipelines to improve candidate–job relevance scoring. - Developed validation and quality-check routines to improve recommendation consistency. - Collaborated with backend teams on integration, testing, and deployment readiness.	

VOLUNTEERING

University of Moratuwa	Colombo, Sri Lanka
<i>Special Interests Group Coordinator</i>	<i>ENTC</i>
Worked closely with the Cube Satellite Team, Department Micromouse Team	
Spark SIG CubeSat Project, University of Moratuwa	Colombo, Sri Lanka
<i>Onboard Computing System - Team Member</i>	<i>Volunteering Task</i>
ENTC, University of Moratuwa	Colombo, Sri Lanka
<i>Batch Representative</i>	<i>Semester 2 and Semester 3</i>
Software Developer at WebTeam MCG	Galle, Sri Lanka
<i>Software Developer (Volunteer)</i>	<i>Jan 2019 – Present</i>

HONORS AND AWARDS

Dean’s List Placement: Semester 1, 2, 3, 4, University of Moratuwa	2026
Semi-finalist: Spark 2026, University of Moratuwa	2026
Semi-finalist: RoboGames 2026, University of Moratuwa	2026
Silver Medal: Korea International Youth Olympiad 4I	2017
WWIEA Award: Korea International Youth Olympiad 4I	2017
Merit Award: Sahasak Nimawum All-Island Competition	2017

TECHNICAL SKILLS

Languages: Python, C, C++, MATLAB, JavaScript, Go, SQL, Bash
Markup: HTML, CSS, Markdown, L ^A T _E X
Frameworks and Libraries: TensorFlow, PyTorch, NumPy, OpenCV, Gazebo, ROS 2, Scikit-learn, FastAPI, Flask
Hardware: STM32, Atmel, Espressif, Raspberry Pi
Tools / Software: Git, Linux, Altium, SolidWorks, KiCad, STM32CubeIDE

REFERENCES

Dr. Ranga Rodrigo

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