

Subhasinghe Gamage Sahas Eashan

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PERSONAL STATEMENT

Enthusiastic undergraduate pursuing a Bachelor's Degree in Electronic and Telecommunications Engineering at the University of Moratuwa. Passionate about solving complex problems and dedicated to mastering technology. A competitive programming enthusiast and robotics aficionado.

EDUCATION

- 2023 - 2027 B.Sc. Engineering Honours in Electronic and Telecommunications Engineering, **University of Moratuwa** (CGPA: 3.94/4.0)
Relevant Coursework: Circuits and Signals, Communication Systems and Networks, Differential Equations, Robotics Design and Competition, Engineering Design Project, Methods of Mathematics, Fundamentals of Computer Organization and Design
- 2013 - 2022 Completed secondary education at **Richmond College**, Sri Lanka (Z-score: 2.21)
Advanced Level Results: Combined Mathematics (A), Physics (A), Chemistry (A)

PROFESSIONAL EXPERIENCE

Research Associate

Roboticgen Labs

January 2025 - Present

Contributing to the research and development of robotic solutions, focusing on PCB design and hardware/software troubleshooting.

Robotics Team Member

External Team under Roboticgen Labs

September 2024 - March 2025

Participating in the design, implementation, and testing of robotic systems for competitions and external projects.

PROJECTS

Robotics & Automation

Omni-Directional Robot — [GitHub Repository](#). Designed and developed an omni-directional robot for the Engineering Design Realization (EDR) module. Features optimized Mecanum wheel configuration, embedded control systems, advanced sensor integration, and autonomous navigation capabilities.

RoboGames 2024 – University Category (2nd Runners-Up) — [GitHub Repository](#). Developed simulation and real-world robotic solutions for three challenge rounds: maze navigation via color sequence, survivor rescue in fire maze scenarios, and real-world object matching and manipulation. Utilized Raspberry Pi 5, Kobuki base, and Kinect sensor with multithreaded motor control, HSV-based object tracking, and advanced computer vision algorithms.

Robotic Design Project — [GitHub Repository](#). Created a modular autonomous robot capable of line navigation, maze solving, color line following, and precise box manipulation. Features custom robotic arm and chassis designed in SolidWorks with advanced control algorithms.

MicroMouse V1 2023 — [GitHub Repository](#). Developed an autonomous maze-solving robot featuring advanced pathfinding algorithms, precise motor control, and real-time maze mapping capabilities. Implemented flood-fill algorithms and optimized navigation strategies.

FastLine Follower – Speed Obo Robotics Gen3 — [GitHub Repository](#). Engineered a high-speed line following robot with advanced sensor arrays, PID control systems, and optimized chassis design. Features real-time path prediction and dynamic speed adjustment.

Computer Vision & Image Processing

RoboGames Computer Vision System — Implemented sophisticated computer vision pipeline using Kinect camera for real-time color matching and object recognition. Developed HSV color space algorithms for robust color detection under varying lighting conditions, enabling precise object identification and tracking.

AI & Machine Learning

Agentic AI Practice — [GitHub Repository](#). Developed intelligent AI agent systems including web search and finance agents with multi-agent collaboration capabilities. Created specialized AI agent for PDF document processing and analysis, showcasing advanced agent orchestration and natural language processing.

Web Development

Bioplastics Revolution Website — [GitHub Repository](#). Built a comprehensive React-based website for the Bioplastics Revolution project, featuring modern UI/UX design, responsive layouts, and interactive elements to showcase sustainable marine plastic solutions and seaweed-based biodegradable products.

IoT & Embedded Systems

ESP32 Medibox Simulation – EN2853 — [GitHub Repository](#). Developed a fully functional simulated Medibox using ESP32 microcontroller. Features intelligent medicine reminders, comprehensive environmental monitoring (temperature, humidity), and multi-channel alerts via onboard display and push notifications.

Shoe Cleaning and Drying Machine — [GitHub Repository](#). Engineered a fully automated shoe cleaning and drying system with Arduino-based control, custom PCB design, and precision-engineered enclosure. Streamlines footwear maintenance through intelligent automation.

Hardware & Electronics

Linear Power Supply Design — Designed a precision 10V, 10A linear power supply featuring advanced voltage regulation, current limiting, short-circuit protection, and thermal management. Includes double-layer PCB design, comprehensive simulation analysis, and optimized thermal enclosure.

Sustainability & Innovation

Bioplastic Revolution – Ocean's Gift — [GitHub Repository](#). Spearheaded a sustainable initiative to combat marine plastic pollution through innovative biodegradable cling films and bags created from Sri Lankan seaweed. Encompasses seaweed farming partnerships, marine pollution tracking systems, and comprehensive environmental impact assessment.

CERTIFICATIONS

Mathematics for Machine Learning Specialization

Imperial College London, Dec 2024

Relevant Coursework: Linear Algebra, Multivariate Calculus, Principal Component Analysis (PCA).

Deep Learning Specialization

DeepLearning.AI, Jun 2024

Relevant Coursework: Regression and Classification, Advanced Learning Algorithms, Unsupervised Learning, Recommenders, Reinforcement Learning (ongoing).

Embedded Systems and AI Courses

University of California, Irvine

Relevant Coursework: The Raspberry Pi Platform and Python Programming, Interfacing with the Arduino, The Arduino Platform and C Programming.

SKILLS

Programming Languages	Python, C, C++, MATLAB, MicroPython, Verilog HDL
Languages	Sinhala (Native), English (Full Professional), Tamil (Elementary)
Software	SolidWorks, Altium Designer, LTSpice
Documentation Tools	Google Docs/Sheets, LaTeX, Canva
Other Tools	Arduino IDE, STM Cube IDE

ACHIEVEMENTS & AWARDS

Major Awards

Finalist – PLEASE Hack 2025	2025
Top finalist in South Asia representing Sri Lanka with seaweed-based bioplastic solution for marine pollution.	
2nd Runners-up – IESL RoboGames (University Category)	2025
Autonomous robot project utilizing Kinect sensor and advanced computer vision algorithms.	
Best Environment Project – Tyumen State University, Russia	2025
"Calling Fire on Us!" Ideathon recognition for innovative bioplastics solution.	
Winner – Insighture Hackathon	2025
AI-powered virtual real estate assistant development and implementation.	
1st Runner-up – CodeRally 5.0	2025
Leading high-performing team from University of Moratuwa in competitive programming.	

Competition Finalists

Programming & Algorithms:	Codex 2025, CodeSprintX (IIT), AlgoExplore, MoraXtreme 9.0, Reidxtreme 3.0
Robotics:	Robofest (Micromouse), Dextron (Fast Line Following)
Global Rankings:	15th place - XTREME Encode 2024, Participant - IEEE Xtreme 18.0

Academic Recognition

Bronze Medalist	2014
Sri Lankan Mathematics Olympiad Competition	

LEADERSHIP

Vice Secretary	IEEE RAS (University of Moratuwa)	Jan 2025 - Present
Matching Manager IGV	AIIESEC Colombo South	Jan 2024 - Jun 2024
Team Leader	Educational Team of M-Pirates (MoraMaths)	Feb 2024 - Jun 2024
Co-Chair	Mora Battle Bots (IEEE RAS)	Mar 2025 - Present
Co-Chair	Robotics Day (IEEE)	Mar 2025 - Apr 2025
Assistant Pillar Head	Public Relations (Mora Esports)	May 2024 - Present

EXTRA CURRICULAR ACTIVITIES

Committee Member (Operations)	Electronic Club University of Moratuwa.	Jun 2024 - Present
Volunteer Management Committee	IEEE Student Branch University of Moratuwa.	Jan 2025 - Present

PROFESSIONAL AFFILIATIONS

IEEE Member	Institute of Electrical and Electronics Engineers
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REFERENCES

Prof. Rohan Munasinghe, Ph.D.

Senior Professor

Department of Electronic and Telecom Engineering

University of Moratuwa, 10400, Sri Lanka

W: <https://rohan.staff.uom.lk>

Drone Lab: <http://ent.mrt.ac.lk/uavlab/>

Robotics Lab: <https://ent.uom.lk/risl/>

Visiting Scientist

CALS – Cornell University, Ithaca NY 14853

W: <https://cals.cornell.edu/rohan-munasinghe>

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Dr. Ranga Rodrigo

B.Sc. Eng. Hons (Moratuwa), M.E.Sc. (Western, Canada), Ph.D. (Western, Canada)

Senior Lecturer

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Dr. Upeka Premaratne

B.Sc.Eng. (Moratuwa), M.E.Sc. (Western Ontario), PhD (Melbourne), LL.B. (OUSL), Attorney-at-Law

Senior Lecturer - Grade 1

Department of Electronic and Telecommunication Engineering

University of Moratuwa