

Akindu Delgahagoda

Undergraduate Student

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PERSONAL STATEMENT

Engineering undergraduate with a specialized focus on robotics and distributed systems architecture. Proficient in bridging the gap between embedded hardware and cloud services to create cohesive intelligent solutions. Brings a rigorous, analytical approach to system design, combining theoretical depth with the practical expertise needed to deliver robust, full-stack engineering projects.

EDUCATION

University of Moratuwa <i>BSc Eng Hons, Computer Science and Engineering</i> <i>Stream - Integrated Computer Engineering CGPA - 3.5</i>	Bandaranayake Mawatha, Moratuwa 10400 2022 - 2026
Sabaragamuwa University of Sri Lanka <i>Diploma in English Credit Pass</i>	Belihuloya, Ratnapura 2021 - 2022
Sivali Central College <i>GCE A/L 2020 Physical Science Stream 3A Passes</i> <i>GCE O/L 2017 9A Passes</i>	Hidellana, Ratnapura 2007 - 2020

PROFESSIONAL EXPERIENCE

WSO2 <i>Intern Software Engineer, Digital Transformation Team</i>	105, Baudddhaloka Mawatha, Colombo 4 Jan 2025 - Jun 2025
<ul style="list-style-type: none">Developed "Infra Portal," a full-stack infrastructure automation platform using Ballerina, React and MySQL to replace legacy manual workflows, streamlining GitHub repository provisioning across the company.Upgraded and optimized existing internal middleware services to facilitate seamless integration with the GitHub API using GraphQL, ensuring robust communication between the new portal and external providers.Architected the solution to be extensible beyond GitHub, designing a scalable foundation to support future infrastructure automation requirements.Implemented secure authentication using Asgardeo and deployed the production-ready containerized application on Choreo for internal organizational use.	

SKILLS

Programming Languages: Python C/C++ C# VHDL Java JavaScript Ballerina
Database: MySQL SQLite
Frameworks and Libraries: OpenCV ROS React Node-RED FastAPI Streamlit PyQt TensorFlow PyTorch
Tools: Git GitHub Docker Xilinx Vivado
Technical Fields: Embedded Systems Robotics IoT Machine Learning Computer Vision DevOps
Hardware Platforms: Arduino ESP32 Raspberry Pi STM32 Nvidia Jetson Orin

PROJECTS

JetVIO <i>Python C++ ROS</i>	July 2025 – Ongoing <i>Final Year Project (Group)</i>
<ul style="list-style-type: none">Development of a visual-inertial navigation system for autonomous UAV operation in GPS-denied environments.Assembled the UAV platform and initiated simulation-based testing to evaluate system behavior and identify key limitations.Targeting a validated UAV capable of stable state estimation and autonomous navigation without GPS.	
FPGA Audio Spectrum Analyzer <i>VHDL Xilinx Vivado Nexys A7 FPGA</i>	Jul 2025 – Dec 2025 <i>Module Project (Group)</i>
<ul style="list-style-type: none">Real-time hardware-accelerated audio visualizer performing FFT analysis and VGA rendering on an FPGA.Experimented with audio input subsystem using UART and I2S protocols.Deployed on Nexys A7 FPGA Board and achieved low-latency signal processing and synchronized playback.	

QUOT3D – Automating 3D Printing Quotation

Python | FastAPI | Docker | Git

Jan 2025 – Jun 2025

Module Project (Group)

- Web-based platform for generating instant and accurate 3D printing quotations from uploaded 3D models by slicing the model.
- Developed the backend service to analyze 3D model files and extract pricing-related metrics.
- Enabled automated, vendor-configurable quotation generation, reducing manual communication overhead.

FazeTrak – Smart Webcam

Python | C++ | OpenCV | PyQt | ESP32

Jul 2024 – Nov 2024

Semester Project (Individual)

- Smart webcam system with face recognition and gesture-based face locking and tracking.
- Implemented computer vision pipeline, servo control logic, and desktop application for hardware integration.
- Achieved real-time face tracking with pan-tilt control and streaming video for usage of other applications via OBS Virtual Camera Driver.

MinerShield

C++ | JavaScript | ESP32 | Node-RED

Jul 2024 – Oct 2024

Competition Project (Group)

- IoT-based wireless monitoring system for miner safety in underground environments.
- Contributed to embedded system integration, IoT workflow development and frontend development.
- Demonstrated reliable environmental and miner-status monitoring through a prototype sensor network.

MechaPulse

C++ | ESP32 | Raspberry Pi | Python | FastAPI

Jan 2024 – May 2024

Competition Project (Group)

- Industrial IoT system for machinery fault detection using acoustic signal analysis via Machine Learning.
- Led the deployment of ML models on Raspberry Pi and managed embedded system integration.
- Validated fault detection of a drill machine using the prototype system.

Smart MediBox

Arduino | ESP32 | IoT | PCB Design

Jan 2024 – Mar 2024

Module Project (Individual)

- Smart medicine container for indicating scheduled medicine intake times.
- Designed embedded firmware, IoT connectivity, and Node-RED based control dashboard.
- Delivered a functional prototype supporting remote monitoring and timely medication alerts.

AspireTrust – Bank Transaction and Loan Processing System

MySQL | HTML | CSS | Git

Sep 2023 – Nov 2023

Module Project (Group)

- Database-driven banking system supporting transactions and loan processing.
- Contributed to database schema design and query implementation.
- Produced a simple prototype system demonstrating robust database management practices.

Nanoprocessor

VHDL | Xilinx Vivado | Basys3 FPGA

May 2023 – Jun 2023

Module Project (Group)

- Custom-designed 4-bit nanoprocessor implemented on FPGA hardware.
- Architected the top-level processor design and managed simulation workflows.
- Successfully deployed and validated the processor on a Basys3 FPGA board.

CERTIFICATIONS

Embedded AI

Getting Started with Machine Learning at the Edge: *Arm* | Apr 2025 | [🔗](#)

Computer Vision with Embedded Machine Learning: *Edge Impulse* | Mar 2025 | [🔗](#)

Introduction to Embedded Machine Learning: *Edge Impulse* | Mar 2025 | [🔗](#)

Computer Vision & AI

Vision Language Models Bootcamp: *OpenCV University* | Dec 2025 | [🔗](#)

Fundamentals of Deep Learning: *NVIDIA DLI* | Dec 2025 | [🔗](#)

Computer Vision: *Kaggle* | Dec 2024 | [🔗](#)

Intro to Machine Learning: *Kaggle* | Jan 2024 | [🔗](#)

Embedded Systems

Arm Cortex-M Architecture & Software Development: *Arm* | Apr 2025 | [🔗](#)

Embedded Software & Hardware Architecture: *CU Boulder* | Mar 2025 | [🔗](#)

DevOps & Engineering

GitHub Foundations: *GitHub* | Mar 2025 | [🔗](#)

Docker Training for Absolute Beginners: *KodeKloud* | Feb 2025 | [🔗](#)

EXTRA CURRICULAR ACTIVITIES

IEEE Robotics and Automation Society Student Branch, UoM

- Term 24/25 - Secretary Oct 2024 – Oct 2025
- Term 23/24 - Vice Chairman Oct 2023 – Oct 2024
- Term 22/23 - Member—Design Committee Oct 2022 – Oct 2023
- BotTalks 1.0 - Co Chair Mar 2023 – Apr 2023

IEEE Student Branch, University of Moratuwa

- Term 23/24 - Member—Membership Development Committee Nov 2023 – Nov 2024
- IEEE Open Week - Volunteer—Chapter Coordination Committee Feb 2024 – Mar 2024
- MoraForesight 1.0 - Volunteer—Finance Committee, Design Committee Mar 2023 – Aug 2023

Mora Hiking Club, University of Moratuwa

- Stridian 2025 - Media Team July 2025 – Sep 2025
- Stridian 2024 - Health Team July 2024 – Sep 2024
- Stridian 2023 - Participant July 2023 – Sep 2023

Department of Computer Science and Engineering, University of Moratuwa

- CSE40 - Volunteer—Marketing Committee Jan 2025 – May 2025
- Hit The Grounds - Volunteer—Marketing Committee Dec 2024 – Jan 2025
- CSE Career Fair 2024 - Volunteer—Company Coordination Committee Dec 2023 – Jan 2024

Techno 2023 Exhibition, IESL IT and Computer Engineering

- Graphic Designer Sep 2023 – Oct 2023
- Demonstrator Sep 2023 – Oct 2023

Exmo 2023 Exhibition, University of Moratuwa

- Event Committee Member Mar 2023 – Jul 2023

AWARDS & ACHIEVEMENTS

Dean's List: Semester 6

Evolve IoT Mini Research Competition: 1st Place

SLIoT Challenge 2023: Semifinalists

President's Scout Award: Issued in 2019

National Junior Science Olympiad 2016: Gold Medal

International Mathematics and Science Olympiad 2013: Silver Medal

National Mathematics and Science Olympiad 2013: Bronze Medal

REFERENCES

Prof. Dulani Meedeniya

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University of Moratuwa.

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Dr. Sulochana Sooriyaarachchi

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