DINUJAYA WIJEWICKRAMA

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Summary

I am an undergraduate Electronic and Telecommunication Engineering student with a strong passion for Software Development, IoT, Multimedia Electronics and Digital System Design, driven by a desire to make a positive impact on the world through innovation and novelty. I am dedicated to leveraging my skills and knowledge to contribute to the advancement of technology.

Education

2022 – Present B.Sc. Engineering (Electronic and Telecommunication) Hons. at **University of Moratuwa**

2020 GCE A/L Examination at **Dharmaraja College, Kandy** (Physical Science Stream)
(3 A Passes with 2.71 Z-Score, **District Rank - 4**, All-Island Rank - 44)

Experience

London Stock Exchange Group (LSEG) December 2024 - May 2025

Intern (Software Engineer) at MAP - Tools Team

Radar - Centralized dashboard integrating multiple code quality matrices

- Migration of legacy code from Python 2 to Python 3
- Time optimization using Thread Pool

Encrypted Hash-Based Deterministic Build System for C++

- Build system that produces deterministic outputs by generating encrypted hashes based solely on source code, addressing the need in the Conan package manager for source-dependent build hashes.

Dynamic Pipeline Variable Handling in GitLab CI/CD (PoC)

- Involved in building and developing a solution to overcome GitLab's limitation of static pipeline variables by enabling dynamic variable assignment across pipeline runs
- Used Ansible scripts to generate each required pipeline dynamically once the development is done.

Generalized Pattern Based Groovy-to-YAML Code Conversion Tool (PoC)

- Developed a Python-based tool to detect code patterns in Groovy scripts and convert them into equivalent YAML configurations using a generalized, pattern-driven approach.

Exposure to Collaborative Workflow

- Exposure and experience in collaborative team environments, actively contributing to project planning, analysis, task breakdown, and iterative development within an Agile workflow.

YaalaLabs July 2025 - December 2025

Intern (Software Engineer) – AI Team

Distributed Observability for Serverless Systems

- Implemented OpenTelemetry-based distributed tracing for a large-scale AWS Lambda architecture to enable end-to-end request visibility across services.
- Designed trace instrumentation strategies to correlate asynchronous and event-driven Lambda executions within a single business workflow.
- Integrated trace data with visualization and analysis tools to support system performance monitoring and business-level insights.
- Enabled analysis of latency, error propagation, and service dependencies to support operational decision-making and AI-driven analytics use cases.

Projects

Hydrolink: IoT-Enabled Water Tank Management System and Optimization Platform for Automation and Predictive Analysis *

- IoT-based ecosystem of a portable device and mobile application supported by a cloud server, transforming traditional water tank structures into IoT-enabled systems.
- Features real-time monitoring, cut-off prediction, alerting, and comprehensive analysis.
- Progressed to small-batch manufacturing through the World Bank's *AHEAD* project via the University Business Linkage Cell (UBLC) and applied for intellectual rights.
- Won the championship of the *SLIoT Challenge 2024*.

EEG-Based Assistive Care Brain–Computer Interface for a Locked-In Paediatric Patient (Ongoing)

- Designed an end-to-end assistive brain–computer interface (BCI) system to enable interaction for a locked-in paediatric patient using non-invasive EEG signals.
- Developed the signal acquisition pipeline from active electrodes through low-noise analog front-end design and digital processing to reliably capture clinically usable EEG data.
- Implemented Steady-State Visually Evoked Potential (SSVEP)-based signal processing and classification to translate neural responses into actionable commands for external interaction.

Replace: Smart Wall Socket with IoT Integration for Real-Time Monitoring, Usage Analysis, and Predictive Fault Detection *

- A complete IoT enabled ecosystem to be integrated at Electric Wall Sockets to measure, monitor and controlled with a smart ecosystem
- A unique communication systetm is implemented enabling automatic routing and smart gateway for efficient connectivity
- Powered by a web UI for monitoring and backend for analysis, data aquisition and Machine Learning based predictive anormally detection.

Transformer Thermal Inspection System with Automated Anomaly Detection and Maintenance Record Automation *

- Built a full-stack platform to digitize transformer thermal inspections, managing transformer metadata, baseline and maintenance images, and inspection workflows.
- Implemented an AI-based anomaly detection pipeline using AWS Lambda for thermal image comparison, visualization, and human-in-the-loop annotation with feedback for model improvement.
- Delivered end-to-end inspection reporting with interactive image comparison, persistent annotations, and automated maintenance record generation using React, Spring Boot, Supabase, and cloud services.

Explainable Heart Sound Classification Using MFCC-Based Deep CNNs for Cardiac Abnormality Detection *

- Implemented an end-to-end heart sound classification pipeline combining signal processing, deep learning, and explainability to distinguish normal and abnormal cardiac recordings.
- Extracted Mel-Frequency Cepstral Coefficients (MFCCs) to generate time–frequency representations optimized for cardiac signal characteristics.
- Designed and trained a CNN on MFCC heatmaps using dropout and L2 regularization, implemented in Python with Librosa and PyTorch and accelerated using GPUs.

EcoWatt – Complete IoT Ecosystem for Monitoring Solar Inverters *

- Designed a modular embedded C++ system (ESP8266) simulating a solar inverter, enabling reliable Modbus RTU read/write over a cloud API with CRC validation and retries.
- Implemented a full telemetry pipeline with local buffering, lossless compression, secure uploads, remote configuration, command execution, and firmware-over-the-air (FOTA) updates with rollback.
- Optimized for MCU deployment with power-aware scheduling, fault recovery, anti-replay security, and end-to-end validation under injected failure scenarios.

Awards and Achievements

Sri Lanka IoT Challenge(SLIoT) by Sri Lanka Telecom Mobitel - Champions 2024

Won the championship alongside with Team-Hydrolink in SLIoT' The flagship IoT-based innovations competition in Sri Lanka organized by Sri Lanka Telecom-Mobitel and the Department of Computer Science and Engineering at the University of Moratuwa.

Arduino Challenge by IEEE Industrial Electronics Society(SLTC) - Champions 2024

Won the championship alongside with Team-Hydrolink in SLIoT' The flagship IoT-based innovations competition in Sri Lanka organized by Sri Lanka Telecom-Mobitel and the Department of Computer Science and Engineering at the University of Moratuwa.

International Maths and Science Olympiad(IMSO)-2013 @Phillipines -Bronze 2013

Won bronze medal at IMSO held in Alfonso Cavite,Philipines, representing Sri Lanka in IMSO 2013 in Science category after a challenging theory and practical tests.

Skills and Tech Stack

Technical Skills

Programming Languages	Python, C++, Dart
Technical Skills	Git/Github
	CI/CD - GitLab, Ansible, AWS
	PCB Design – Altium Designer
	Enclosure Design – SolidWorks
	Mobile Development – Android Studio

Soft Skills

Leadership, Public Speaking, Communication Skills, Problem Solving, Organizing Skills, Music

Volunteering

Project Coordinator - GS Community Project - Sasnaka Sansada April 2022 - June 2023

Project Advisor - GS Community Project - Sasnaka Sansada April 2023 - April 2024

As a part of "Ganitha Saviya" the flagship project of Sasnaka Sansada Foundation, I was able to be the co-coordinator in building one of the largest communities of Ordinary Level Students to enrich them with educational content while providing them the guidance and mentorship.

Sub Editor - Electronics Club - ENTC June 2023 - June 2024

Assistant Secretary - Electronics Club - ENTC June 2024 - June 2025

Led the board of editors for E-Club, the student body of the Department of Electronic and Telecommunication Engineering, for the 2023-2024 term. Responsible for overseeing editorial content and contributing to the publication's direction and quality.

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