Madusha Suraweera

Electronic Engineer | Embedded Engineer | AI Engineer

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Profile

An experienced engineer with over four years of expertise in Embedded Systems, Electronics, and AI, holding an MEng in Electronic and Electrical Engineering and an MSc in Embedded Systems and IC Design. Proficient in PCB design, firmware development, IoT, robotics, and AI technologies, with a strong focus on delivering innovative, market-ready solutions and excelling in team environments.

Professional Experience

IPD Colombo (Pvt) Ltd *Embedded Engineer - AI* **Colombo 05, Sri Lanka** *01/2023 - present*
- Working on IPD Projects in Australia.
- Designing and implementing AI and IoT solutions, such as Building Management Systems(BMS) and chatbots(Azure and Neo4J).
- Conducting RnD initiatives using platforms like Arduino and Raspberry Pi.
- Streamlining development processes by leading CI/CD operations.

East Link Engineering Company (Pvt) Ltd *Electronic Engineer* **Colombo 05, Sri Lanka** *03/2021 - 12/2022*
- **Electronic Engineer (09/2021 - 12/2022):**
  - Worked in the RnD Division on ATM, Vending Machines, and Kiosks.
  - Participated in RnD Projects including:
    - CPM (Cinnamon Processing Machine), RMB (Recycle Material Buying) Vending Machine, LVM (Liquid Volume Measuring) Vending Machine, SWS (Self Weighing Station) Machine, Solar Experience Center, EV Charging Station.
  - Led the RnD Division as a Tech Lead.
  - Performed PCB Designing and Troubleshooting.
- **Assistant Electronic Engineer (03/2021 - 09/2021):**
  - Worked in the RnD Division on ATM, Vending Machines, and Kiosks.
  - Performed PCB Designing and Troubleshooting.

SriLankan Airlines *Trainee Engineer* **Katunayake, Sri Lanka** *10/2019 - 01/2020*
- Gained experience in the Engineering Department including Technical Servicers and Avionics Workshops.

Piramal Glass PLC *Trainee Engineer* **Horana, Sri Lanka** *09/2018 - 12/2018*
- Worked in the Electronics Section including Instrument workshops and Electrical Workshops.
- Led a project to minimize wastage in coating machine operations, improving production efficiency.

Education

Master of Science (MSc) in Embedded Systems and IC Design *2023–2025*
Liverpool John Moores University,UK
Completed degree with Distinction.

Master of Engineering (MEng) in Electronic and Electrical Engineering *2017–2021*
University of West of England,UK
Completed degree with Merit (Second Class, Division 1).
Completed 60 ECTS credits and 120 university credits (BEng Level) with Distinction.

Technical Skills

Embedded Systems	MicrocontrollerProgramming(Arduino,Raspberry Pi,NodeMCU),FPGA Programming(VHDL,Verilog),Programming Languages(Python,MATLAB,C,C++),RTOS,IoT,ESP32,ESP8266.
Protocols and Interfaces	I2C, SPI, UART (RS232), CAN,Buletooth,WiFi and USB.
EDA Tools	Xilinx Vivado, ModelSim and Quartus
Debugging Tools	JTAG, logic analyzers, and oscilloscopes
Hardware Design	PCB Design(Proteus,Altium),Simulation(LTspice),SOLIDWORKS
AI and Machine Learning	TensorFlow,PyTorch,keras and LangChain
Tech Stack	Python,C,JavaScript,AngularJS,ReactJS,NodeRed,SQL,Neo4J,REST API
Version Control Tools	Git,GitHub and Azure DevOps
Project Management Tools	Jira,Asana

Courses

Linkedin	*Embedded C*	*January 2025*
Linkedin	*Learning Altium*	*January 2025*
Linkedin	*LLaMa for Developers*	*January 2025*
Neo4J	*Neo4j and LLM Fundamentals*	*October 2024*
Altium	*Altium PCB Design Course*	*June 2024*
eduonix	*IoT E-degree - The Novice to Expert Program in IoT*	*Oct 2022*
Google	*Project Initiation: Starting a Successful Project*	*Sep 2022*
Udemy	*Electric Vehicle Technology*	*Aug 2022*
Google	*Foundantion of Project Management*	*Jul 2022*
University of Moratuwa (CODL)	*Python Programming*	*Aug 2022*
University of Moratuwa (CODL)	*Python for Beginners*	*Jun 2022*
Udemy	*CMOS Digital Integrated Circuit Design*	*Jun 2022*
eduonix	*Machine Learning For Absolute Beginners*	*Jun 2022*
Udemy	*I2C, SPI, UART (RS232), VGA in VHDL for FPGA interfacing*	*May 2022*
Udemy	*PCB Design + PCB For Microcontroller Circuit+ MultiLayer PCB*	*May 2022*

Memberships

Member of the Institution of Engineering and Technology (MIET)   Membership No: 110097604

Projects

2024 MSc Project - Attention-Based CNN for Embedded ECG Signals Classification
Embedded-AI Model for diagnosing ECG Patterns.
Technologies: Embedded-AI, CNN,Python
Responsibilities: Developer

2020 MENG Project - Automated Home using IoT and Neural Networks
Control system for home automation using IoT and Neural Networks.
Technologies: Camera Security System, IoT (NodeMCU), Neural Network, PIC Programming

2020 GSM and IoT Based Weather Monitoring System
Device for weather parameter measurement and reporting via SMS and web platform.
Technologies: Arduino, NodeMCU, GSM
Responsibilities: Developer

2020 Data Acquisition of Accelerometer (ADXL345) using FPGA
System to acquire sensor values and display on VGA and PC.
Technologies: VHDL, FPGA, I2C Protocol
Responsibilities: Developer

2020 Mesh Network using NodeMCUs
Wireless Sensor Network (WSN) using NodeMCUs for data transmission.
Technologies: IoT, WSN, NodeMCU
Responsibilities: Developer

2020 MIMO System using MATLAB
Multiple Input Multiple Output (MIMO) system simulation.
Technologies: MATLAB
Responsibilities: Developer

2019 PLL System using MATLAB

Phase-Locked Loop (PLL) system implementation with FIR Filters.

Technologies: MATLAB
Responsibilities: Developer

2018 Cold End Coating

Solution for Cold End Coating machine to reduce wastage.

Technologies: Arduino, Photoelectric Proximity sensor
Responsibilities: Developer

2017 Obstacle Avoiding Robot

Robot capable of obstacle avoidance using Neural Networks.

Technologies: MATLAB, Arduino, AI
Responsibilities: Developer

2018 CPU using FPGA

8-bit CPU implementation using VHDL on Altera FPGA.

Technologies: VHDL, FPGA
Responsibilities: Developer

Languages

- **English**

- **Sinhala**

References

- **Dr. Mahima Weerasinghe**
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