# Suwasthiga Nagendramoorthy

Department of Computer Science and Engineering, University of Moratuwa.
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## About

Passionate Computer Science and Engineering undergraduate (Integrated Computer Engineering) at the University of Moratuwa, specializing in IoT and Embedded Systems. Experienced in sensor integration, wireless communication, and real-time data processing for smart devices. Skilled in hands-on projects demonstrating connected IoT solutions. Motivated to contribute to innovative embedded systems and IoT applications that drive digital transformation and solve real-world problems.

## Education

**BSc Engineering (Hons) in Computer Science and Engineering.**    **Feb 2023 – Present**
University of Moratuwa, Sri Lanka.
Currently pursuing the Integrated Computer Engineering (ICE) stream

**G.C.E. Advanced Level**    Feb 2022(2021)
J/ Vembadi Girls' High School, Sri Lanka.
Combined Mathematics - A, Chemistry - A, Physics - A
Country-wide Rank: 125
District(Jaffna) Rank: 9
Z-Score: 2.5340

**G.C.E. Ordinary Level**    Nov 2018
J/ Vembadi Girls' High School, Sri Lanka.
Results: 9A's

## Projects

**Smart Helmet with Alcohol Detection and Emergency Alert System**    *Ongoing*
- Developing with ESP32 to detect alcohol, crashes, and helmet wear status.
- Disabled ignition on alcohol detection and sent GPS/emergency alerts via SIM800L and Bluetooth.
- Focused on sensor integration and embedded communication.
- **Github** ↗

**Smart Medibox for Medicine  Environment Monitoring**    *Apr2025-Jun2025*
- Built with ESP32 for alarm-based medicine reminders and real-time environmental monitoring (temperature, humidity, light).
- Enabled remote configuration via MQTT using Node-RED and a dashboard UI.
- **Github** ↗

**4-bit Nanoprocessor Design**    *Feb2024-May2024*
- Designed a 4-bit processor on BASYS 3 FPGA with a custom 12-bit instruction set.
- Implemented VHDL modules for instruction decoding, program ROM, ALU, and control logic.
- Verified functionality through simulation and on-board testing.
- **Github** ↗

**Pocket Watch – Money Tracking Web Application**    *Ongoing*
- Developing a personal finance web application to track expenses, set budgets, and generate financial reports.
- Built using React.js for the frontend and Node.js with Express for the backend.
- Integrated MongoDB for data storage and implemented JWT-based authentication for secure user sessions.
- **Github** ↗

**SportsHive – All-in-One Sports Platform** *Apr2025*
- Developed a web platform for sports management (coach/ground booking, club joining, academy applications, competition tracking).
- Used modern web frameworks and real-time databases for seamless UX.
- **Github** ⬀

## Awards and Achievements

**1st Runner-Up – HackElite 1.0**, IEEE WIE Student Branch Affinity Group of University of Moratuwa. Oct 2024

Awarded 1st Runner-Up in HackElite 1.0. Collaborated with my teammates to develop an innovative solution that impressed the judges, demonstrating strong teamwork and technical expertise.

**Most Popular Idea Award – SportsHive at SpiritX Final Round**, Top 10 Teams 2025

Received the Most Popular Award in the final round of SpiritX among the top 10 teams for the SportsHive project.

## Skills

**Programming Languages:** C++, Python, SQL, JavaScript.

**Embedded Systems & Electronic Design:** Arduino, ESP32, Verilog HDL.

**Tools & Platforms:** Vivado, Git, VS Code, Postman, Firebase, MongoDB.

**Web Development:** React, HTML, CSS, JavaScript.

## Professional Affiliations and Services

**CS & ES Student Representative:** Department of Computer Science & Engineering, Faculty of Engineering, University of Moratuwa. 2023-2024

**Member:** Mathematics Society, University of Moratuwa. 2024-Present

**Member:** HR panel, Mora Lenz, University of Moratuwa. 2024 - Present

## Volunteering Experience

**Programme Committee Member:** Radiance'24, Futuro 3.0 University of Moratuwa. 2024

**Delegate Handling Member:** Mora Media Awards, University of Moratuwa. 2025

**Member, Company Calling Panel:** Official Career Fair (*Are You Ready 2025?*), Rotaract Club of University of Moratuwa. 2025

## Referees

**Prof. (Ms) Dulani A. Meedeniya**
Semester 5 Coordinator, Department of
Computer Science & Engineering,
Faculty of Engineering, University of Moratuwa,
Sri Lanka.
Email: dulanim@cse.mrt.ac.lk

**Dr. Adeesha Wijayasiri**
Industrial Training Coordinator, Department of
Computer Science & Engineering,
Faculty of Engineering, University of Moratuwa,
Sri Lanka.
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