

# Bimsara Nawarathna

*An Electronic and Telecommunication Engineering Undergraduate  
at University of Moratuwa, Sri Lanka*

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## OBJECTIVE

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I am a dedicated Electronic and Telecommunication Engineering undergraduate at the University of Moratuwa, Sri Lanka. My primary interests lie in networking, wireless communication and artificial intelligence. My academic journey has given me a deep desire to contribute to innovative ideas. I am dedicated to constantly improving myself and always look for chances to enrich my skills. I'm excited to work with other experts to push the limits of knowledge and technology together.

## WORK EXPERIENCES

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- **IoT Platform Developer** — Dec 2024 - May 2025  
Internship at Magicbits Pvt Ltd, Sri Lanka
- **Freelance Software & System Developer** — Feb 2025 - Present

## EDUCATION

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- **University of Moratuwa, Sri Lanka** — 2022 - Present  
B.Sc. Honours in Electronic and Telecommunication Engineering (CGPA: 3.75/4.00)
- **NIBM Kandy Campus, Sri Lanka** — 2021 - 2022  
Distinction pass in Diploma in Software Engineering awarded by Coventry University, UK
- **St. Anthony's College, Kandy, Sri Lanka** — 2007 - 2020  
Passed GCE A/L Examination with 3A's in Physical Science Stream with a District Rank 06  
(*University Entrance Examination*) (Z-Score: 2.6845)

## SKILLS

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### Technical Skills

- Programming Languages: Python, Java, C/C++, HTML5, CSS3, JavaScript, TypeScript
- Web & Mobile Development Frameworks: React.js, React Native, Next.js, Firebase
- Machine Learning Libraries/Tools: TensorFlow, PyTorch, Hugging Face
- Cloud Computing Platforms: AWS, Azure
- IOT System Development Frameworks: ThingsBoard, Node-Red
- Simulation Tools: Matlab, Wireshark
- Embedded Systems Development Platforms: ESP32, Raspberry Pi

### Soft Skills

- Logical Thinking & Analytical Skills
- Communication & Interpersonal Skills
- Presentation Skills
- Language Skills: English, Sinhalese

## PROJECTS

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### Final Year Project - University of Moratuwa

- **Split-Federated LLMs on Open Radio Access Networks (ORAN)** 2025 - Ongoing  
(Done in collaboration with University College Dublin (UCD))

Optimized split-federated learning based LLMs for ORANs to address resource constraints and privacy concerns in such applications. Many LLM based ORAN use cases can be made efficient and secure using this learning framework. For this particular project intrusion detection (IDS) was chosen for demonstration purposes.

**Technologies and Tools Used:** Python, PyTorch, TensorFlow, ORAN Testbed

### Internship - Magicbits Pvt Ltd

- **Remotely Controlling Solar Inverters using Remote Procedure Calls (RPC)** Feb 2025  
(Deployed in Windforce Pvt Ltd and LECO Pvt Ltd)

Implemented remote controlling features for above sites to on/off inverters and control their max power levels using RPC feature of ThingsBoard. Updated the necessary firmware on the device end to receive the call and reassign values in relevant registers.

**Technologies and Tools Used:** ThingsBoard, RPC, ESP32, C/C++, AT-Commands

**LinkedIn:** [Remote Inverter Controlling](#)

### Other Projects

- **Sportsense Mobile App - A Personalized AI Sports Trainer** July 2024  
(Awarded 1st Runners-Up at Idealize 2024)

Uses computer vision to analyze and correct user posture in real-time across multiple sports. Offers personalized feedback through audio and guides users through workout routines.

**Technologies and Tools Used:** Hugging Face, Firebase, Android Studio, Kotlin

**GitHub:** [SportSense](#)

- **Product Market Fit (PMF) Analyzer** Feb 2025  
(Freelance Project)

A web based tool that tracks progress of a given SAAS product in an event based manner. It integrates AI to provide analytics and recommendations based on these events, which is useful for management to make decisions.

**Technologies and Tools Used:** Python, Mixpanel, AWS, React.js, JavaScript

- **CAD Editor For House Designing** June 2025  
(Freelance Project)

Built an Automated CAD Editor that converts simple floor plan images into editable digital models. Integrated automated feature detection for rooms, doors, and windows to streamline the design process.

**Technologies and Tools Used:** Python, OpenCV, AWS, Next.js, Konva.js, JavaScript

- **Computer Vision Based Product Sorter** April 2024  
(In partial fulfillment of the module EN2160-Electronic Design Realization)

An industrial device that detects faulty products on a conveyor belt based on dimensions using a computer vision algorithm which will then be sorted out using a mechanical arm.

**Technologies and Tools Used:** Python, OpenCV, C++, ESP32, Altium, SolidWorks

**GitHub:** [Product Sorter](#)

- **Metroband - Vibrating Enabled Tempo Keeping Wristband** Aug 2023  
(Presented at Mora Ventures 6.0)

A wearable wristband tailored for musicians, integrating vibration-enabled tempo-keeping capabilities. It assists musicians in maintaining tempo in noisy environments.

**Technologies and Tools Used:** C++, ESP32, Altium, SolidWorks

**GitHub:** [Metroband](#)

## ACHIEVEMENTS

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- **Champion** – VRCade 2.0 Competition, IEEE Students Branch, University of Moratuwa (2024)
- **Finalist** – SPARK Innovation Competition, E-Club, University of Moratuwa (2024)
- **1st Runner-up** – Idealize Mobile & Web App Development Competition (2024)
- **Conceptualist Award Winner** – Idealize Mobile & Web App Development Competition (2024)
- **Finalist** – Brainstorm: Sri Lanka's Premier Healthcare Innovation Competition (2024)
- **Semifinalist** – Microsoft Imagine Cup, AI-Driven Student Startups Competition (2024)
- **Semifinalist** – Robot Battle Competition, University of Uwa Wellassa (2024)
- **Dean's List** – Academic Excellence (Semesters 1, 5 & 6), University of Moratuwa, Sri Lanka
- **Best Student Award (Combined Mathematics)** – St. Anthony's College, Kandy (2020)
- **Best Student Award (Chemistry)** – St. Anthony's College, Kandy (2020)

## EXTRA-CURRICULAR

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- **Customer Experience Manager (Incoming Global Volunteer)** – AIESEC in Colombo South (2023)
- **Organizing Committee Vice President (Events)** – Project Heartbeat 1.1 (2022)
- **Delegate** – National Leadership Development Seminar, AIESEC in Sri Lanka (2023)
- **Best Performing Manager (Incoming Global Volunteer)** – AIESEC in University of Moratuwa (2023)
- **Best Project of the Quarter (Incoming Global Volunteer)** – AIESEC in University of Moratuwa (2023)
- **Spirit of the Month** – AIESEC in Colombo South (July 2023)
- **Quarterfinalist (Men's Open Doubles)** – UMISF Badminton Tournament (2023)
- **Member** – University Badminton Team (2022–2023)
- **Organizing Committee Member** – UMISF Badminton Tournament (2023)
- **Active Member** – Electronic Club, University of Moratuwa (2022–2025)
- **Captain** – College Badminton Team (2019–2020)
- **Champion** – U17 Badminton Doubles, Zonal Level (Kandy Zone) (2017)
- **Champion (A-Division)** – U15 Badminton Doubles, All-Island Championship (2012)

## REFERENCES

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**Prof. Tharaka Samarasinghe**  
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