


# Tharusha Sihan Fonseka

Biomedical Engineering Undergraduate, University of Moratuwa

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## EDUCATION

<b>University of Moratuwa</b> <i>B.Sc. Engineering (Hons.) in Biomedical Engineering; CGPA: 3.95/4.00</i>  • Signal Processing, Embedded Systems, Electronic Instrumentation, Robotics, Autonomous Systems, Biomechanics, Circuits and Systems Design <i>Minor in Mathematics</i> • Advanced Differential Equations, Linear Models and Multivariate Statistics, Linear Algebra, Calculus	Moratuwa, Sri Lanka Jun 2021 - Present May 2022 - Present
<b>Ananda College</b> <i>GCE Advanced Level - Physical Science Stream; Z-Score 3.1996; Island Rank -1<sup>st</sup></i> • Combined Mathematics, Physics, Chemistry	Colombo-10, Sri Lanka Jan 2017 - Aug 2019
<b>Coursera</b> <i>Machine Learning Specialization (DeepLearning.AI)</i> <i>Robotics: Aerial Robotics (University of Pennsylvania)</i>	Online Feb 2021 - Present Oct 2023

## EXPERIENCE






<b>Research Affiliate - University of Sydney</b> • Designing and simulating an epidermal stretch sensor to detect multi-point bending of a finger. • Designing a wearable device to capture and transmit real-time motion data from a resistive epidermal sensor. • Hardware setup for simultaneous data capturing from two radar devices in different frequency bands.	Dec 2023 - May 2024
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## AWARDS AND SCHOLARSHIPS

<b>Dean's list</b> <i>Semesters - 1, 2, 3, 4, 5, 6</i>	2022, 2023
<b>Winners   Electronic Design Competition</b> <i>IEEE Sri Lanka section</i>	Sep 2023
<b>1<sup>st</sup> Runners-up   SPARK Challenge 2023</b> <i>Innovation Competition for Sustainable Development - Electronic Club of University of Moratuwa</i>	Jun 2023
<b>Dialog Merit Scholarship Award</b> <i>For outstanding performance in GCE A/L Examination.</i>	2023
<b>Mahapola Higher Education (Merit) Scholarship</b> <i>For outstanding performance in GCE A/L Examination. Ranked #1 out of 19508 students</i>	2021
<b>S.A. Wijethilake Memorial Challenge Cup   Ananda College</b> <i>Awarded for the Best Academic Performance of the College at the G.C.E. A/L Examination 2019</i>	2020
<b>"Anada Pradeepa" Award   Ananda College</b> <i>Awarded to the College subject toppers based on the G.C.E. A/L Examination 2019</i>	2020
<b>Silver medalist   Sri Lankan Physics Olympiad</b> <i>Awarded by Institute of Physics Sri Lanka</i>	2019
<b>Silver medalist   Sri Lankan Astronomy and Astrophysics Olympiad</b> <i>Awarded by Institute of Physics Sri Lanka</i>	2018

## PROJECTS

<b>Humanoid Head For Robot Receptionist Capable of Natural Human Interaction</b> • Project lead. • Bio mimicking facial expressions and active eye gazing. • Human identification and natural conversation abilities.	Ongoing
<b>Phoenix Cube Satellite Project</b> • Project lead • Stage 1, launching a high-altitude balloon into the stratosphere	Ongoing

- Maze Solving Micromouse Robot(Robofest 2023, 2024)**  2023, 2024
- Fully Autonomous maze solving robot, which is tasked to reach the destination point in the shortest time possible
  - STM32 microcontroller-based hardware implementation
- Scorpion - Battle Robot (Exmo 2023)**  Jul 2023
- Designed a battle robot to demonstrate in EXMO 2023
  - This includes a motorized hook and a linear roller, which were driven and controlled by an Arduino Nano
  - I was involved in designing and implementing the mechanical design
- Smart Switch for Automating Conventional Home Appliances**  Jun 2023
- Designed a smart switch to automate conventional home appliances, which can be easily integrated into an existing domestic installation
  - Can be controlled remotely through the internet or manually through capacitive touch buttons
- Analog Implementation of a Five Band Audio Equalizer**  Feb 2023
- Five band audio equalizer using analog 4<sup>th</sup> order Sallen Key filters and a differential amplifier
- IV Fluid Flow Regulator**  Aug 2022
- An automatic IV fluid flow regulator to aid in the treatment of dengue patients
  - Flow rate and the period can be selected by the user
  - Fluid is pumped using a peristaltic rotary pump

## LEADERSHIP AND VOLUNTEERING

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- SEDS-Mora - University of Moratuwa**  
Project Manager Apr 2024 - Present
- Old Anandian Engineers' Guild - Students' Chapter**  
Secretary Mar 2024 - Present  
Vice President Mar 2023 - Mar 2024  
Deputy Director- School Affairs Jan 2022 - Mar 2023
- Brainstorm 2023 - IEEE EMBS, University of Moratuwa**  
Event Team Lead Aug 2022 - May 2023
- Department of ENTC - University of Moratuwa**  
Field Representative May 2022 - Feb 2023
- Roteract Club - University of Moratuwa**  
Event Co-chair - TourEye Sept 2021
- Anandian Astronomical Association - Ananda College**  
Chief Organizer Nov 2017 - Nov 2018

## SKILLS SUMMARY

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- Languages:** English, Sinhala (Native Proficiency)  
**Programming Languages:** Python, Matlab, C++  
**Software:** PCB designing (Altium), CAD designing (Solidworks), Circuit simulation (Proteus, LtSpice)  
**Soft Skills:** Leadership, Project Management, Team working

## REFERENCES

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**Dr. Peshala Jayasekara**  
*B.Sc.Eng.Hons(Moratuwa), M.Eng(UTokyo), Ph.D(UTokyo), MIEEE*  
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 Department of Electronic and Telecommunication Engineering,  
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