

# PASINDU SANKALPA



## Undergraduate | Electronic & Telecommunication Engineering

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An enthusiastic electronic undergraduate who loves to solve problems with an engineering approach. Can quickly adapt to new technologies. Use his full potential and skills to make the world a better place.

Areas of interest : Software Development Machine Learning Telecommunication IoT

## EXPERIENCE

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|-----------------------|---|
| Jan 2023<br>July 2023 | <b>Software Engineering Intern, AXIATA DIGITAL LABS</b> <ul style="list-style-type: none"><li>➤ Gained valuable experience working collaboratively with diverse teams, which has allowed me to learn and adapt to ever-evolving trends and best practises within the industry.</li><li>➤ <b>e-KYC/BNPL project</b> - React based know-your-customer app which has features of NIC and selfie photo comparison, selfie liveliness detection, NIC number capturing with OCR.</li><li>➤ <b>v-KYC project</b> - Developed Node JS based back-end which has features of video conferencing, share messages and files between multiple users.</li></ul> |
| Jan 2023<br>Oct 2022  | <b>Visiting Instructor, UNIVERSITY OF MORATUWA</b> <ul style="list-style-type: none"><li>➤ Lab instructor for EN2533 - Robot Design and Competition</li><li>➤ Old lab practicals updated, guided and evaluated for 20 batch students</li></ul>  |
| 2022<br>2019          | <b>Home Visiting/Online Tutor, SELF-EMPLOYED</b> <ul style="list-style-type: none"><li>➤ Physics &amp; Combined Maths Tutor for AL students</li><li>➤ Maths Tutor for OL students</li><li>➤ Online teaching using ZOOM platform</li></ul>   |

## PROJETS

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|---|---------|
| <b>DEEP LEARNING-BASED DRONE CLASSIFICATION</b><br><a href="https://github.com/Pasindu-Sankalpa/FYP-Drone-Classification">github.com/Pasindu-Sankalpa/FYP-Drone-Classification</a><br>Our final year research project involves the detection and classification of various drone types based on their radar and acoustic signatures. The primary objectives include achieving high classification accuracy, ensuring real-time performance on a resource-constrained platform, and establishing robust detection capabilities. To attain these outcomes, we plan to implement multi-modal feature extraction and sensor fusion through deep learning algorithms.<br><span>Deep Learning</span> <span>Signal Processing</span> <span>Radar</span> <span>GNU Radio</span> | ONGOING |
| <b>AQUAMATE - AQUARIUM AUTOMATION SYSTEM</b><br><a href="https://github.com/Pasindu-Sankalpa/Aquamate">github.com/Pasindu-Sankalpa/Aquamate</a> <a href="https://aquamate-global.web.app">aquamate-global.web.app</a><br>Developed a system for automate the process in commercial aquariums. This includes water quality (temperature and pH level) monitoring and notify workers. Also we automated the fish feeding process. Dashboard is provided to the owner's mobile phone/pc for monitoring and commanding.<br><span>C++</span> <span>HTML</span> <span>CSS</span> <span>Java Script</span> <span>ESP32</span> <span>Altium</span> <span>Solidworks</span>  | 2022    |
| <b>VOLTAGE REGULATOR</b><br>Developed a voltage regulator for high power applications. Regulated voltage is 28 volts with a maximum current rating of 30 amperes. An over current protection circuit was also added. In this project, maintaining the ripple ratio at an acceptable level and thermal management played a prominent role.<br><span>Altium</span> <span>Solidworks</span>  | 2022    |

## VIS-BRIDGE

2022

[github.com/Pasindu-Sankalpa/project-SPARK](https://github.com/Pasindu-Sankalpa/project-SPARK)

This device can control the electrical equipment based on the hand gestures given by the user. The project was developed based on the Raspberry Pi single board computer. Computer vision algorithms was employed to identify the hand gestures. A power electronic circuit controlled the power delivered to equipment.

Python Image Processing Raspberry Pi Altium Solidworks

## AUTONOMOUS ROBOT FOR COMPETITION

2021

[github.com/Pasindu-Sankalpa/Robocop](https://github.com/Pasindu-Sankalpa/Robocop)

We developed an autonomous mobile robot simulation for UOM's EN2532 - Robot Design and Competition Module & successfully completed the given task. It consisted of maze solving, object detection and placing, etc. Webots simulator was used as the simulation platform.

C C++ AVR Webots

## LEAD ACID BATTERY CHARGER

2021

We developed a lead-acid battery charger with having the charging profile of constant current charging followed by a constant voltage stage to charge a 12v Lead acid battery, with a maximum charging current of 1A. The system is based on Pulse Width Modulation (PWM) technique.

Altium Solidworks

## RGB COLOR SENSOR

2021

[github.com/Pasindu-Sankalpa/RGB\\_Sensing](https://github.com/Pasindu-Sankalpa/RGB_Sensing)

We developed an RGB color sensor using ATMEGA328P chip. It can identify the any given surface color and give R,G,B values almost precisely. The sensing component is an LDR.

C C++ ATMEGA328P AVR Altium

## AUTOMATIC WATER LEVEL CONTROLLER FOR WELL

2021

Developed an automatic water level controller for home use. Water level of tank is displayed using an LED panel. Both water level of tank and well is considered before activating the pump.

C C++ ATMEGA328P Altium Solidworks

## MOBILE CHARGER WITH TIMER

2019

I have developed a simple mobile charger with timer using an arduino nano for my personal use. Currently in operation.

Arduino

## EDUCATION

### B.SC. ENG (HONS.) ELECTRONIC & TELECOMMUNICATION ENGINEERING

UNIVERSITY OF MORATUWA

DEC. 2019 – PRESENT

SRI LANKA

- ▶ CGPA - 3.84/4.20
- ▶ Dean's list in semesters 1, 2, 5 & 6
- ▶ Key modules undertaken :
  - Data structures and algorithms
  - Fundamentals of image processing and machine vision
  - Machine vision

### G.C.E. ADVANCED LEVEL

BANDARANAYAKE COLLEGE - GAMPAHA

2018

SRI LANKA

- ▶ 3A's in Physical Science Stream with 2.1941 Z-core
- ▶ Gampaha District Rank 16

### OTHER COURSES

- ▶ Machine Learning Specialization - Coursera ONGOING
- ▶ Digital Skills : Web Analytics - FutureLearn Credentials 2023
- ▶ SQL Basic, Intermediate & Advanced - Hackerrank Credentials Credentials Credentials 2023
- ▶ Problem Solving Basic & Intermediate - Hackerrank Credentials Credentials 2022
- ▶ Computer Programming for Everyone - FutureLearn Credentials 2021
- ▶ Introduction to Virtual, Augmented and Mixed Reality - FutureLearn Credentials 2021
- ▶ Certificate Course of Computer Science - IDIT Gampaha Credentials 2019

## ACHIEVEMENTS

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|---------------------------|---|
| Top 10<br>2022            | <b>SPARK Challenge, UNIVERSITY OF MORATUWA</b> <ul style="list-style-type: none"><li>› Our project is Vis-bridge</li><li>› Team Voyager-3</li></ul>             |
| Top 50 in LK<br>2021,2022 | <b>IEEE Extreme, IEEE</b> <ul style="list-style-type: none"><li>› Rank 20 in LK IEEEExtreme 16.0</li><li>› Rank 49 in LK IEEEExtreme 15.0</li></ul>             |
| Top 10<br>2015            | <b>National Statistics Olympiad Competition, INSTITUTE OF APPLIED STATISTICS - SRI LANKA</b> <ul style="list-style-type: none"><li>› Won a merit pass</li></ul> |

## SKILLS

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<b>Programming skills</b>	C, C++, Python, Java, Java Script, React, React Native, Matlab, Git
<b>Technical Skills</b>	Altium, Arduino, Raspberry Pi, Multisim, Solidworks, Cisco Packet Tracer, Android Studio
<b>Soft Skills</b>	Leadership, Teamwork, Time management
<b>Languages</b>	Sinhala(native), English

## VOLUNTEERING

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|-----------------|---|
| Present<br>2019 | <b>Member of Electronic Club, UNIVERSITY OF MORATUWA</b> <ul style="list-style-type: none"><li>› We could be able to successfully conduct many events and workshops as a team</li></ul> |
| Present<br>2020 | <b>Member of IEEE Society, IEEE</b>   |



## REFERENCES

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### **Dr. Sampath Perera**

*Senior Lecturer*



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### **Mr. Aruna Dissanayake**

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