

HESHAN DISSANAYAKE

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INTERESTS

- Robotics and Automation
- Algorithmic Programming
- Embedded Systems
- Machine Learning

EDUCATION

University of Peradeniya

Undergraduate in BSc. Engineering(Hons.)

2017 Nov - Present

GPA: 3.53/4.00

Kingswood College ,Kandy

G.C.E. Advanced Level Examination

District Rank - 108, Island Rank - 1200

Physics (A), Chemistry (A), Combined Mathematics (B)

2003 - 2016

Z-Score: 1.83

G.C.E. Ordinary Level Examination

A passes for all 9 subjects

SKILLS

Programming Languages

Python, Java, JavaScript, C, C++

Numerical Computing Packages

MATLAB, Octave, Numpy, TensorFlow

Procedural programming

ARM Assembly

Hardware Programming

AVR programming, Verilog HDL

PCB Designing

Eagle, Altium

3D Modelling

AutoCAD, Fusion360

Version control

git

Practical Skills

Soldering, PCB design and development

Languages

English, Sinhala

ACHIEVEMENTS

DataStorm 1.0

2020

2nd Runners up

Task : Credit Card Default Prediction

ACES Hackathon

2019

1st place in Travel and Safety Category

Project : Neural Network based CCTV System for tracking individuals and unattended baggage

SLIIT Robofest

2019

3rd place in the undergraduate category

Task : Autonomous Maze Navigating Robot (Micromouse)

ACES Hackathon

2018

1st place in Network and System Category

Project : Landslide Detection System

Selected to Faculty of Engineering, University of Peradeniya

2016

District Rank - 107, Island Rank - 1200

Z - score - 1.83

9A passes in GCE Ordinary Level

2013

PROJECTS

Obstacle robot swarm for swarm robotic project

2020-2021

- swarm robos.
- *Technologies: Python, OpenCV, numpy, MQTT, JavaScript, GRPC*
- *Techniques: Image Processing, stochastic gradient descent, Encryption*

Bird Watcher system

2020-2021

- A system to watch birds from remote streaming devices
- *Technologies: Python, RTMP, OpenCV, MQTT, JavaScript, ffmpeg, nginx, Flutter, Google Vision AI*
- *Techniques: Real time video streaming, Motion Detection*

SIIM-ISIC Melanoma Classification

2020

- Identify melanoma in lesion images.
- *Technologies: Python, Tensorflow, numpy*
- *Techniques: Image Processing, Convolution Neural Networks, Transfer Learning*

Convolution Auto Encoder for Person Re-identification

2020

- Using Auto Encodes for Convolution neural networks to identify a predefined person.
- *Technologies: Python, Tensorflow, numpy*
- *Techniques: Image Processing, Auto encoders, Convolution Neural Networks*

Verilog Based CPU

2020

- Designing of a 32-bit CPU which supports simple instructions with caching.
- *Technologies: Verilog*
- *Techniques: Computer Architecture*

8-bit Computer

2020

- Design and building a 8-bit computer.
- *Technologies: Embedded system, Integrated circuits*
- *Techniques: Computer Architecture*

Intelligent CCTV System

2019

- Tracking people and unattended baggage using a neural network based CCTV System.
- *Technologies: Python, Numpy, OpenCV, TensorFlow*
- *Techniques: Neural Networks, Data Clustering*

Micromouse

2019

- Autonomous maze navigation robot using custom made sensors
- *Technologies: Arduino Microcontroller, IR Sensors, Gyroscope*
- *Techniques: Graph Theory, PID Control Systems, Sensor Calibration*

Aerial Sensoring using Hyperspectral Imagery for Soil Moisture Detection 2018

- Using Hyperspectral images taken from satellites and drones to estimate soil moisture content.
- *Technologies: Python, Numpy, TensorFlow*
- *Techniques: Hyperspectral Data manipulation, Neural Networks*

Ambulatory Wound Monitor 2018

- A small portable sensor that can be embedded in wounds to monitor parameter such as temperature, pH and dressing pressure, in order to monitor the health of wounds
- *Technologies: Arduino Microcontroller, Bluetooth Communication*

Analog line Follower Robot 2018

- Analog Line Follower (PD Controller based)
- *Technologies: Op Amps*
- *Techniques: PD controlling*

Landslide Detection System 2018

- A prototype device which monitors shear strain of soil in landslide prone areas in order to predict landslides.
- *Technologies: Arduino Microcontroller, WiFi Communication*

EXTRA-CIRRICULAR

Committee member of the Hacker's club of the University of Peradeniya (2020 - Present)

Member of the Music Society of the University of Peradeniya (2018 - Present)

Committee member of Astronomy Club of KingsWood College Kandy (2016)

Member of Science Society of KingsWood College Kandy (2016)

Member of Photography of KingsWood College Kandy (2016)

OTHER INTERESTS AND HOBBIES

3D modeling and digital art Enthusiast.

Drawing and Painting Enthusiast.

Amature Astronomer.

REFERENCES

Prof. M.A.R.M Fernando

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