

HESHAN DISSANAYAKE

Department of Computer Engineering Faculty of Engineering University of Peradeniya Sri Lanka
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PROFILE

A computer Engineering undergraduate with a motivation to explore the underlying concepts and theories to invent creative solutions to existing problems. I have interests in vision, robotics and the machine learning application in the field of robotics. I have done several interesting projects to explore the real application aspect of my interests. Perform well in my academic and self initiated projects is something that I consider as important. I believe that achieving the solution for a certain problem requires leadership, management, and communication skills, qualities which I develop every day in my life.

INTERESTS

Computer Vision Machine Learning Robotics and Automation

EDUCATION

University of Peradeniya, Sri Lanka *2017 Nov - Present*
Undergraduate in BSc. Engineering(Hons.) **GPA: 3.6/4.00**

PROJECTS

(project portfolio: <https://heshds.me/>)

Group Projects

SIIM-ISIC Melanoma Classification 2020

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

Obstacle robot swarm for swarm robotic project 2020-2021

- A system of obstacle robots for a swarm robotic platform.
- *Technologies: Python, OpenCV, numpy, MQTT, JavaScript, GRPC*
- *Techniques: Image Processing, stochastic gradient descent, Encryption*

8-bit Computer 2020

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

Micromouse 2019

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

Individual Projects

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*

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*

Verilog Based CPU

2020

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

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

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, Altim

3D Modelling

AutoCAD, Fusion360

Version control

git

Practical Skills

Soldering, PCB design and development

Languages

English, Sinhala

EXTRA-CURRICULAR

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. Roshan G. Ragel

Professor, Dept. of Computer Engineering

Univeristy of Peradeniya

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Dr. Isuru Nawinne

Senior Lecturer, Dept. of Computer Engineering

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