HESHAN DISSANAYAKE

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

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

EDUCATION

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

Kingswood College ,Kandy *2003 - 2016*
G.C.E. Advanced Level Examination
District Rank - 108, Island Rank - 1200 **Z-Score: 1.83**
Physics (A), Chemistry (A), Combined Mathematics (B)

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, Altim
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

- A system of obstacle robots for a swarm robotic platform.
- *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, ffmepg, 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 Micro controller, 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 Micro controller, WiFi Communication*

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.