HESHAN DISSANAYAKE

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SUMMARY

An electrical and electronic engineering undergraduate with a passion to learn and understand theory, motivation to work on practical projects and strength to produce results. Experienced in design, development and implementation of software and hardware solutions.

I am a self motivated student who is at present doing well in both the academic program (3.95/4.00 GPA) and in extra projects (see CV). I have worked on several projects during the past year, both course related and self initiated.

The work I have done was possible because of my passion to build and the capability of solving engineering problems with my skills and knowledge. I am willing to learn on my own when the problem requires. I can adapt to technologies fast and produce results.

Through my journey through school and the university so far, I have developed communication skills, time management skills and leadership skills. I can take responsibility and work with minimal supervision.

INTERESTS

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

EDUCATION

University of Peradeniya *2017 Nov - Present*
Undergraduate in BSc. Engineering(Hons.) **GPA: 3.53/4.00**

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
Hardware Programming	Arduino, Verilog HDL
3D Modelling	AutoCAD, Fusion360
Practical Skills	Soldering, PCB design and development
Languages	English, Sinhalese

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, ffmepg, nginx, Flutter, Google Vision AI*
- *Techniques: Real time video streaming*

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*

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*

Various Other Hobby/Course Projects 2018-2019

- Analog Line Follower (PD Controller based), Thermal mass flowmeter, Logic Gate level implementation of a 4-digit pass-code lock, Mini CNC machine from reused computer parts
- *Technologies: Analog and Digital Electronics, Arduino*

EXTRA-CIRRUCULAR

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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