HESHAN DISSANAYAKE

Department of Computer Engineering Faculty of Engineering University of Peradeniya Sri Lanka
e16088@eng.pdn.ac.lk ◇ +94750365739 ◇ Portfolio

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 Robotics and Automation Cyber-physical system

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

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*

RISCV 32-bit pipeline CPU *(in progress) 2020

- RISCV 32-bit five stage pipeline CPU design.
- *Technologies:Verilog HDL*
- *Techniques: pipeline CPU architecture, RISCV32MI*

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*

SIIM-ISIC Melanoma Classification 2020

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

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, ffmepg, 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*
National 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
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Dr. Isuru Nawinne
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