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Research Interests

- Machine Learning
- Computer Vision
- Back-end Development
- Blockchain

Education

University of Moratuwa **Aug 2021 – Present**
BSc Eng (Hons) in Electronic and Telecommunication Engineering *GPA (Up to Semester 4): 3.78/4.00*

- Pathway: Computer Vision and Pattern Recognition
- Dean's List: Semester 1 and 2

Embilipitiya President College **Jan 2011 – Aug 2019**
General Certified Examination Advanced level *Aug 2019*

- Z-Score: 2.5627
- Combined Maths: A, Chemistry: A, Physics: A
- District Rank: 6, Island Rank: 151

Embilipitiya President College **Jan 2011 – Aug 2019**
General Certified Examination Ordinary level *Dec 2016*

- Grade: 8A, 1B

Technical Skills

Languages/Database: C++(Intermediate), Python(Intermediate), Java(novice), JavaScript(novice), Matlab(novice), C(novice), Verilog(novice), VHDL(novice)
Web Technologies: Angular, NodeJS, MongoDB
Developer Tools: Google Colab, VS Code, Sublime Text, MPlab
Version Control: Git, GitHub
Frameworks: Bootstrap, Angular, Sklearn
Software Tools: Altium Designer, Solidworks, Multisim, LTspice, Quartus

Relevant Coursework

Mathematics: Mathematics(A), Methods of Mathematics(A+), Calculus(A+), Differential Equations(A), Linear Algebra(A-)
Miscellaneous: Circuits, Signal and System(A), Data Structures and Algorithms(A+), Computer Organization and Architecture(A)

Courses

Blockchain Basics **Ongoing**
- Offered by University at Buffalo

Object Oriented Programming in Java **Ongoing**
- Offered by University of California San Diego

HTML, CSS, JavaScript for Web Developers | *Link* **May 2022**
- Offered by Johns Hopkins University

Full-Stack Web Development with Angular Specialization | *Link* **May 2022**
- Offered by Hong Kong University of Science and Technology

Python and JavaScript skills certification | *Link* **Apr 2022**
- Offered by HackerRank

Python and C++ Courses | *Link* **Apr 2022**
- Offered by SoloLearn

Web Design for Beginners | *Link* **Mar 2022**
- Offered by University of Moratuwa, DP Educations

Undergraduate Projects

Air Quality Monitoring Device | *Altium Designer, Proteus, SolidWorks, ArduinoIDE Git* **Jul 2023**

- This is a individual Project that aimed to design a compact and portable device that could provide real-time measurements of CO2 concentration, temperature, humidity and Dust concentration in various indoor environments.

Maze Solving Robot | *ArduinoIDE, SolidWorks* **Feb 2023**

- Robotic project is a Group Project that involves designing an autonomous robot capable of navigating through a maze by employing both line following and wall following strategies.

Webots Robot Simulation | *Webots, SolidWorks Git* **Feb 2023**

- This project incorporates three distinct tasks, namely Color Line Following and Recognition, Wall Following, and Chess Board Solving.
- We used C++ for the integration of intelligent algorithms, sensory perception, and precise control strategies.

Five Band Equalizer | *Altium Designer, SolidWorks, Multisim Git* **Jan 2023**

- This is a Group Project that is a Analog project aimed at creating a versatile audio equalizer capable of adjusting the levels of five different frequency bands in an audio signal.

Extension Code with a Timer | *Altium Designer, SolidWorks, LT spice Git* **Sep 2022**

- This project is a Group project that is an innovative extension code, this project offers the ability to set specific turn-on and turn-off times, as well as implement periodic on-off cycles for the designated device.

Projects

IEEE TinyML Design Contest at ICCAD | *Python, Colab, PyTorch Git* **Sep 2023 - Ongoing**

- The contest is to build an AI/ML algorithm capable of classifying life-threatening ventricular arrhythmias (VAs) using only labeled one-channel intracardiac electrograms (IEGMs) sensed by single-chamber ICDs.

Flower Exchange Application | *C++, Multi Threading, Shared Resources Git* **Sep 2023**

- This project is a group project given by the LSEG Company and it should be able to take an order list as input and generate an output exchange sequence file.
- The application developed using object-oriented programming and used multi-threading to optimize the application and mutexes used to control access to shared resources.

Customer Market Segmentation using Machine Learning | *python, Colab, sklearn Git* **Aug 2023**

- The goal of this Coursera guided project is to develop a machine learning model using the K-Means algorithm and the elbow method to classify customers based on their credit card usage and payments to the bank.

Titanic Survival Prediction using Machine Learning | *python, Colab, sklearn Git* **Aug 2023**

- The Coursera guided project involved the development of a machine learning model using logistic regression and naive Bayes algorithms to make predictions about whether passengers on the Titanic survived the disaster.

Automated Dam Prototype | *MPlab, C, AVR, PIC Micro-controller Git* **Jul 2023**

- This project is a group project given by Temasek Polytechnic in Singapore, aiming to automate water gate operations with periodic opening and closing to manage water flow.
- Real-time monitoring of water level and water temperature displayed on an integrated LCD screen
- Warning lights and an alarm system activated during gate opening to alert relevant stakeholders.
- Inclusion of a seven-segment display to indicate the duration of gate openness.

VGA implementation on a FPGA Board (EXMO 2023) | *Quartus, Verilog, VHDL* **Jul 2023**

- Implemented VGA output functionality on Intel DE2 FPGA and Xilinx Zybo FPGA using VHDL and C languages for hardware design.

Restaurant Website | *Angular, MongoDB, NodeJS, JavaScript* **May 2022**

- This project related to Coursera Full-stack Specialization.
- Developed the restaurant website using Angular for the front-end and NodeJS for the back end.

CNC Drawing Robot | *Arduino, G-Code* **Sep 2021**

- The CNC drawing robot utilizing Arduino, incorporating two precision stepper motors and a single servo motor.

Experiences and Competitions

Silver Medalist of 2019 Sri Lanka Physics Olympiad

Extra-curricular Activities

IEEE ComSoc Student Branch Chapter of University of Moratuwa - WebMaster
E-Club Electronic and Telecommunication Engineering - Regular Member

References

[1] Dr. Samiru Gayan,
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[2] Dr. Sampath K. Perera,
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