

Chanupa Devnith Wijesinghe

Engineering undergraduate

Department of Electronic and Telecommunications Engineering
University of Moratuwa

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<https://devnithw.github.io>

Summary

I am a second year undergraduate studying biomedical engineering at University of Moratuwa. I am striving to apply mathematics, machine learning and signal processing skills to provide effective solutions in the healthcare industry.

Research interests: Computer Vision and Pattern Recognition, Digital Signal Processing, Medical Image Processing, Quantum Computing

Education

Faculty of Engineering, University of Moratuwa

Aug. 2022 - present

Bachelor of Science (Hons) in Engineering
Specialising in Biomedical Engineering
GPA : 3.98/4.0

Richmond College Galle

Jan. 2012 - Aug. 2020

GCE Advanced Level - Physical science stream - 3A passes with an Z-score of 2.7301
GCE Ordinary Level - 9A's

Professional Experience

Phoenix Cube Satellite Project

Feb. 2023 - present

Member of the onboard-computing sub system

Founding Partner - Hypeworks LK

Jul. 2022 - present

Co-founder of the digital marketing agency Hypeworks LK
Graphic designer, Web developer

Projects

Sparkle Robot - Object Detection System

Sri Lanka Robotics Challenge 2024

A light-weight computer vision system to identify cubes and cylinders which runs on Raspberry Pi 4. Also includes color detection. Made for sub-task of Sri Lanka Robotics Challenge 2024.

<https://github.com/devnithw/SLRC-vision-system>

MFCC Speaker Recognition

Signal Processing Cup 2024

A deep neural network to classify audio recordings of 71 speakers using Mel-Frequency Cepstral Coefficients as a feature extractor. The architecture is a bi-directional LSTM network trained on triplet-cosine loss. Designed for Signal Processing Cup 2024.

<https://github.com/eigensharks/mfcc-speaker-recognition>

ECG sensor and monitor design

Semester 3 Project

For the analog project in EN2091 Module, my team and I designed a ECG monitor device using analog electronic components only. A microprocessor was used to visualize the ECG signal onto a LCD screen.

<https://github.com/devnithw/ecg-monitor>

Brain tumor detection using Neural Network

Kaggle

A Convolutional Neural Network trained on a brain MRI dataset to detect tumors.

<https://www.kaggle.com/code/devnithw/brain-tumor-detection-using-neural-network>

Classifying blood cells using CNN

Kaggle

A Convolutional Neural Network trained on a dataset of blood cell images to classify them into 8 groups.

<https://www.kaggle.com/code/devnithw/classifying-blood-cells-using-cnn>

Mathematical modelling and machine learning using Julia

Educational

A collection of Julia tutorial notebooks written using Pluto.jl and hosted on Github pages.

<https://devnithw.github.io/julia-tutorials>

Unmasked Sakura - Mobile Game

Hobby

I developed a 2D mobile game using Unity Engine and published it on Google Play Store achieving 50+ downloads.

<https://devnithw.github.io/PlayUnmaskedSakura/>

Honors and Awards

Spirit of Service Award, Rotaract Mora	<i>May. 2023</i>
Dean's list placement (Semesters 1, 2 and 3), Faculty of Engineering, University of Moratuwa	<i>Dec. 2022</i>
Sri Lanka Chemistry Olympiad Honorable Mention	<i>Jan. 2020</i>
Sri Lanka All Island Mathematics Quiz Bronze medal	<i>Jan. 2020</i>
Principal's medal for best OL results, Richmond College	<i>2018</i>

Volunteering

IEEE EMBS Student Chapter, University of Moratuwa

Brainstorm 2024 - Design Lead	<i>Dec. 2023 - present</i>
Executive Committee - Content Creator	<i>Jul. 2023 - present</i>
Member	<i>Jan. 2023 - Jun. 2023</i>

Rotaract Club of University of Moratuwa

Co-director of Membership Development	<i>Jun. 2023 - present</i>
Co-chair of Premio Foramalita and Euphoria Prom	<i>Apr. 2023 - May. 2023</i>
Co-chair of project Manusath Handa	<i>Aug. 2022 - May. 2023</i>
Inducted Member	<i>Sep. 2022 - May. 2023</i>

Mathematics Society, University of Moratuwa

Design team - M-Pirates	<i>Jan. 2023 - present</i>
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Electronic Club, University of Moratuwa

Graphic designer and editorial pillar member	<i>Jan. 2023 - present</i>
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Head of Public Relations, RichMUN'21

2021

President of Richmond College Science Society

2019 - 2020

Technical Skills

Languages: Python, MATLAB , C, C++, Javascript, Julia
Markup: HTML, CSS, L^AT_EX, Markdown
Frameworks: Tensorflow, Pytorch, NumPy, Scikit-learn
Software: Unity Engine, Altium Designer, Solidworks, Adobe Photoshop, Adobe Premier Pro
Hardware: Atmel, Expressif, Raspberry Pi
Tools/Other: Git, Github