DASUN MADHAVA PREMATHILAKA

🌐 Webpage   ✉ dasunpremethilake@gmail.com   📱 +94772082867   in 🎓 Profiles   🐙 Github

A Biomedical Engineering Graduate interested in linking the concepts of Mathematics with Medical Sciences. Recently, I have been intrigued by statistical learning theory and its applications in biological/biomedical image analysis.

Research Interests:

Medical Image Processing	Statistical Analysis
Machine Learning	Pattern Recognition

EDUCATION

University of Moratuwa, Sri Lanka　　　　　　　　　　　Dec 2018 - July 2023
B.Sc. Eng. in Biomedical Engineering (First Class Honors)　　Cumulative GPA: 4.06/4.2
Class Rank: **1** (Gold Medal)　　　　　　　　　　Dean's List: Semester 1,2,3,4,5,6,7,8

Royal College, Colombo 07, Sri Lanka　　　　　　　　　Jan 2009 - Dec 2017
G.C.E. Advanced Level (Physical Science Stream)　　　　　　4As / Z-score - 2.4170
(Top 0.15% out of ~35000, Nationwide university entrance examination)

WORK EXPERIENCE

Graduate Research Intern　　　　　　　　　　　　　　Nov 2023 - Present
Computer Vision and Pattern Discovery for Bioimages Group, Bioinformatics Institute, A*STAR　　Singapore

Visiting Instructor　　　　　　　　　　　　　　　　July 2023 - Present
Department of Electronic and Telecommunication Engineering, University of Moratuwa (UoM)　　Sri Lanka

Research Intern in Biomedical Engineering　　　　　　　Jan 2022 - July 2022
Effective Solutions (Pvt) Ltd　　　　　　　　　　　　　　Sri Lanka

PROJECTS/ RESEARCH/ PUBLICATIONS

Deep Geometric Framework to Predict Antibody-Antigen Binding Affinity　　Nov 2022 - Present
Undergraduate Thesis, Collaboration with Dr. Aravinda Munasingha, Pfizer Inc., USA　　Thesis 🌐

Parallel Deep Learning Model for Generalized Synthetic Image Detection　　July 2022 - Sep 2022
Research Competition - IEEE Video & Image Processing Cup 2022 (VIPCUP 2022)　　Report 🌐

Parasitic Egg Detection and Classification in Microscopic Images　　Jan 2022 - July 2022
Research Competition - ICIP 2022 Grand Challenge　　ICIP Submission/ Preprint 🌐

> Nuwan Bandara, Sachini Chandanayake, **Dasun Premathilake**, Chalani Ekanayake; *"Rethinking Object Detection in terms of Classification and Localization through Parallel Deep Learning Models"* (preprint)

CAMSAT: Paediatric Anaesthesia Monitoring System　　Oct 2021 - July 2022
Self-initiated Undergraduate Research　　　　　　　　　　Report 🌐

Undergraduate Course Projects/ Simulations　　　　　　Repository 🐙

UNDERGRADUATE AWARDS

Gold Medal for the highest overall academic performance in the Biomedical Engineering Stream, University of Moratuwa, Sri Lanka　　Dec 2023

5th Place at the IEEE Video and Image Processing Cup (Open Competition), Organized by the University of Naples Federico II and NVIDIA　　Sep 2022

1st Runners-up of the SPARK Challenge 2021/22, Organized by the University of Moratuwa, Sri Lanka　　July 2022

1st Runners-up of the 3rd International Energy and Electricity Market Business Decision Simulation Competition, Organized by Batangas State University, Philippines — Nov 2021

Mahapola Merit Scholarship for Engineering Undergraduates, awarded by the Government of Sri Lanka for the students who excelled at the university entrance examinations — Dec 2017

OTHER NOTABLE ACHIEVEMENTS

Cameron Samarasinghe Memorial Prize, Awarded by Royal College, Sri Lanka for the best performance in Combined Mathematics — Sep 2017

Sir Edward Denham Memorial Prize, Awarded by Royal College, Sri Lanka for the best performance in Mathematics — June 2016

Bronze Medal at the 1st National Astronomy Olympiad (Junior), Organized by the Institute of Physics, Sri Lanka — Nov 2011

Best Mathematical Talent, Awarded by Sri Lanka Olympiad Mathematics Foundation — Jan 2010

Participation at the 6th International Mathematics and Science Olympiad, Indonesia — Nov 2009

Silver Medal (Island 2nd) at the National Mathematics and Science Olympiad, Sri Lanka — Oct 2009

TEACHING EXPERIENCE

Teaching Assistant

BM4151 Biosignal Processing, UoM, Sri Lanka	Fall 2023
EN4553 Machine Vision, UoM, Sri Lanka	Fall 2023
BM3122 Medical Imaging, UoM, Sri Lanka	Fall 2023
EN3160 Image Processing and Machine Vision, UoM, Sri Lanka	Fall 2023
EN3551 Digital Signal Processing, UoM, Sri Lanka	Fall 2023
BM2012 Anatomy and Physiology for Engineers, UoM, Sri Lanka	Fall 2023

SKILLS

Programming Languages: Python, MATLAB, LaTeX
Frameworks: PyTorch, PyG, TensorFlow
Software: MultiSim, LTSpice, Altium
Languages: English (IELTS Academic 8.5/9), Sinhala (Native)

MOOCs

TensorFlow Advanced Techniques : 4-Course Specialization (on Coursera)	Mar 2022
MATLAB Programming for Engineers and Scientists Specialization (on Coursera)	Nov 2020
DeepLearning.AI Tensorflow Developer : 4-Course Professional Certificate (on Coursera)	Sep 2020
AI for Medical Diagnosis (on Coursera)	Sep 2020
Anatomy : 4-Course Specialization (on Coursera)	Aug 2020
Deep Learning : 5-Course Specialization (on Coursera)	June 2020

VOLUNTEER EXPERIENCE / LEADERSHIP

Vice President - Mathematics Society, University of Moratuwa — Sep 2020 - Aug 2021
Organized forums, intra-campus competitions, weekly quizzes and monthly tech talks

Examiner/ Laboratory Instructor/ Translator - Sasip Institute, Sri Lanka — Oct 2017 - Sep 2018
Worked at the Sasip-Assignment-Centre which conducts mock examinations and provides laboratory facilities to conduct Physics practicals for G.C.E. Advanced Level students.

*References available upon request