

Sasini Wanigathunga


 [SasiniWanigathunga](#)  [sasiniwanigathunga](#)  wanigathungasasini@gmail.com

EDUCATION

University of Moratuwa, Sri Lanka

Aug 2021 - Present

B.Sc. Engineering (Hons.) in Electronic and Telecommunication Engineering

GPA: 3.88/4.0 

- **Selected Coursework:** Deep Learning for Vision, Image Processing and Machine Vision, Pattern Recognition, Introduction to Engineering Optimization, Data Structures and Algorithms, Digital System Design, Embedded Systems and Applications, Signals and Systems, Applied Statistics, Linear Algebra, Calculus, Neural Networks and Fuzzy Logic

Sujatha Vidyalaya, Matara, Sri Lanka

2011 - 2019

GCE Advanced Level - Physical Science Stream

4As — Z-score - 2.6629

- Combined Mathematics, Physics, Chemistry, General English

RELEVANT COURSEWORK

Coursera

Machine Learning Specialization (DeepLearning.AI, Stanford University)

- Supervised Machine Learning: Regression and Classification
- Advanced Learning Algorithms
- Unsupervised Learning, Recommenders, Reinforcement Learning

Deep Learning Specialization (DeepLearning.AI, Stanford University)

- Neural Networks and Deep Learning
- Structuring Machine Learning Projects

Introduction to Generative AI (Google Cloud)

EXPERIENCE

Machine Learning Engineer - Intern | FcodeLabs, Sri Lanka

Nov - May 2024

- Research project on a novel approach for the automatic removal of Personally Identifiable Information (PII) directly from audio data.
- Implementation of machine learning modules for integration into the company application - Progress Magic, to enhance its functionality and performance. (Natural Language Processing)

Visiting Instructor | University of Moratuwa, Sri Lanka

Feb - Apr 2024

- Worked as a visiting instructor for EN1094 - Laboratory Practice

PROJECTS

Vision Language Models - Final Year Project

Jun 2024 - Present

Domain Adaptive Open Vocabulary Semantic Segmentation

- Skills: Computer Vision, Deep Learning, Vision Language Models, Prompt Learning
- Developed a novel test-time optimization framework for open vocabulary semantic segmentation (OVSS) operating zero-shot on specialized-domain tasks and evaluated across 22 challenging domain specific datasets and obtained overall +2.03 mIoU improvement over the state-of-the-art.
- Under review for CVPR 2025

Audio Named Entity Recognition

Mar 2024 - Present

- Skills: Audio Signal Processing, Deep Learning, Natural Language Processing, Named Entity Recognition

- Developed a novel approach for the automatic removal of personally identifiable information (PII) directly from audio data without involving text.
- Prepared a custom dataset, manually annotated a test dataset, implemented an end-to-end model architecture and achieved improved results with low latency over existing work.

Ophthalmic Biomarker Detection

Aug - Oct 2023

- Optimized the algorithm to predict the presence or absence of 6 different biomarkers simultaneously on OCT scan images and tested with different preprocessing techniques and backbones (ResNet, DenseNet, VGG19) and optimized the model by changing the classification layers.
- World Rank 6 in IEEE SPS Video and Image Processing (VIP) Cup 2023

Diabetic Retinopathy Severity Grading

Oct 2023

- Replicated an existing work to determine the stage of diabetic retinopathy, given a fundus image and tested with different backbones (UNet, ResNet, DenseNet) and preprocessing techniques.

Software Design Competition

Jan - July 2024

- Skills: Unity, C# Programming
- Designed a game using Unity with WebGL including API authentication, player profile, questionnaire that can be opened using a web browser, dynamic and interactive game environment and a leaderboard.

Non-pipelined Single Stage (Cycle) RISC-V Processor Design

Sep - Oct 2023

- Skills: SystemVerilog, Xilinx
- Designed a 32 bit non-pipelined RISC-V processor using Microprogramming with 3 bus structure using RV32I implementation.

Mini Weather Station

July 2023

- Skills: PCB Designing (Altium), Enclosure Designing (Solidworks), C++ Programming
- Developed a user-friendly mini weather station with essential weather measurements and integrated remote monitoring via web dashboard and mobile app. Managed project from concept to execution, emphasizing market appeal and user centered design.

High Frequency Amplifier

Feb 2023

- Skills: Enclosure Designing (Solidworks), Electronic Simulation (Multisim), Analog Circuit Design
- Designed a high-frequency amplifier with minimal distortion and amplitude loss, capable of driving an 8 Ω speaker, meeting specifications including a bandwidth of 20 kHz - 100 kHz with a 0.1Vp-p input signal.

Robot Design and Competition

Feb 2023

- Skills: Arduino, Webots, C++ Programming
- Designed a simulation of a robot capable of line following, segmented wall following, dotted line following, colour detecting, object picking & placing, climbing through ramps and searching
- The robot was able to identify chess pieces positions on a board and perform a checkmate

AWARDS AND SCHOLARSHIPS

Dean's List - Semesters 1, 2, 3, 4, 6, and 7

Aug 2021 - Present

World Rank 6 in IEEE SPS Video and Image Processing (VIP) Cup 2023

Aug - Sep 2023

Team: TESSERACT | Achieved F1 score of 0.7921 for predicting the presence or absence of six different ophthalmic biomarkers simultaneously.

IEEEExtreme 17.0

Oct 2023

World Rank: 389 | Country Rank: 26

IEEEExtreme 16.0

Oct 2022

World Rank: 874 | Country Rank: 61

Mahapola Higher Education (Merit) Scholarship

Aug 2021

Awarded for outstanding performance in GCE A/L Examination | Ranked 97th in the country.

Colours Award - Sujatha Vidyalaya

2017

Awarded for performance in chess at the national level.

EXPERIENCE

IEEE Industrial Electronics Society Student Branch Chapter - University of Moratuwa

- Chief Editor (Sep 2023 - Sep 2024)
- Assistant Editor (Sep 2022 - Sep 2023)
- Member of Public Relations Team (Sep 2021 - Present)

Electronic Club - University of Moratuwa

- Chair person - Webinar on 'Path towards a successful publication' (Sep 2023)
- Chair person - Webinar on 'Visual SLAM' (Sep 2023)
- Editor (Aug 2023 - Aug 2024) (Student Editor-in-Chief for the E-carrier magazine October 2023)
- Sub Editor (May 2022 - Aug 2023) (Student Editor-in-Chief for the E-carrier magazine October 2022)

AIESEC in Colombo South, Sri Lanka

- Content Specialist in Public Relations and Marketing Team | Winter 22.23 (Aug 2022 - Apr 2023)
- iGT International Relations and Matching Team Member (Jan 2022 - Aug 2022)

SKILLS

Languages: English (Professional proficiency), Sinhala (Native proficiency)

Programming Languages: Python, C++, L^AT_EX

Software & Tools: Visual Studio Code, Git/GitHub, Altium, Solidworks, Xilinx, Matlab, Arduino, Unity

Frameworks: PyTorch, Tensorflow

Sports: Chess (FIDE Rating - 1219)

REFERENCES

Dr. Ranga Rodrigo

Head of the Department
Department of Electronic and Telecommunication
Engineering,
Faculty of Engineering,
University of Moratuwa, Sri Lanka
Tel: +94 11 264 0416
Email: head-entc@uom.lk

Dr. Sampath K. Perera

B.Sc. Eng. (Moratuwa), M.E.Sc. (Western), Ph.D.
(RUB), MIEEE
Senior Lecturer
Department of Electronic and Telecommunication
Engineering,
Faculty of Engineering,
University of Moratuwa, Sri Lanka
Tel: +94 70 572 6264
Email: sampathk@uom.lk