

Kosala Sananthana Herath

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in <https://www.linkedin.com/in/kosalaherath>

PROFILE A challenge seeking researcher destined to serve humanity through a lifelong research career in Electrical and Computer Engineering.

EDUCATION *Doctor of Philosophy (Ph.D.) - Student* February 2020 - Present
Department of Electrical and Computer Systems Engineering

Monash University, Australia

- Coursework Result: **PGO** : ENG6001 - Advanced engineering data analysis
- Coursework Result: **PGO** : ENG6882 - Advanced electronics design
- Research: Quantum charge transport in nanostructures

Bachelor of Science(B.Sc.) in Engineering (Hons)

January 2014 – January 2018

Department of Electronic and Telecommunication Engineering

University of Moratuwa, Sri Lanka

- Date of Graduation: 01 Jan 2018
- Overall **GPA: 4.00/4.20**
- Academic Standing: **First Class**
- **Dean's List** in Semesters 2, 3, 4, 5, 6, 7 & 8 (For 8 Semesters)
- **Electives:** Robotics, Electronic Design Realization, Robot Design and Competition, Electronic Control Systems, Circuits and System Design, Electronic Devices, Data Structures and Algorithms, Neural Network and Fuzzy Logic, Computer Networks, Electronic Product Design and Manufacture
- **Academic Transcript:** [Online Verification - University of Moratuwa, Sri Lanka](#)

General Certificate of Advanced Level in Physical Science Stream

August 2012

Dharmaraja College, Sri Lanka

- Result: **3A's** (Combined Mathematics, Physics, Chemistry)
- Island Rank: **56**
- Awarded **Best Student of the Year** Award in 2011.

General Certificate of Ordinary Level

December 2009

Dharmaraja College, Sri Lanka

- Result: **9A's** (For all subjects)
- Island Rank: **16**

HONORS AND AWARDS

Prof. K.K.Y.W. Perera Award for Electronic and Telecommunication Engineering graduate who has obtained the highest grade point average considering all subjects offered at level 4. (December 2018)

1st place in International Autonomous Robotics Challenge - TECHKRITI, IIT Kanpur, India. (Mar 2016)

2nd Runners-up in International Robotics Challenge - TECHFEST, IIT Bombay, India. (Dec 2015)

Bronze Medal for International Physics Olympiad - Copenhagen, Denmark. (Jul 2013)

Represented National team for Asian Physics Olympiad - Bogor, Indonesia. (May 2013)

Gold Medal for Sri Lankan Astronomy and Astrophysics Olympiad (Apr 2012)

Silver Medal for Sri Lankan Physics Olympiad (Jan 2013)

IEEEExtreme 10.0 Coding Competition - World Rank: 171, Country Rank: 05 (Oct 2016)

1st Place in Sri Lanka Robotics Challenge - University of Moratuwa, Sri Lanka (2015)

1st Place in All Island Statistics Quiz Competition - University of Colombo, Sri Lanka (2014)

Mahapola Higher Education Merit Scholarship - Government of Sri Lanka (Feb 2014 - Jan 2018)

WORKING EXPERIENCE

Teaching Associate February 2021 – Present

Faculty of Engineering, Monash University, Australia

- ENG5001/6001 (2021 - Semester 1) - Advanced engineering data analysis.
- ECE3121 (2021 - Semester 2) - Engineering electromagnetics.
- ENG1003 (2021 - Semester 2) - Engineering mobile apps.

Senior Software Engineer (Research and Development) October 2019 – February 2020

WSO2 Inc, Palm Grove, Sri Lanka

- Design and implement WSO2 Updates tools (Full-Stack).
- Implementation of TOML reader for Ballerina Language.

Software Engineer (Research and Development) January 2018 – October 2019

WSO2 Inc, Palm Grove, Sri Lanka

- Design and implement optimization methods for WSO2 products.
- Implement and analyze the performance of WSO2 product installers in different operating systems.
- Design and implement WSO2 products on distributed cloud platforms.
- Design and implement WSO2 products on containerized product deployment platforms.

Research Officer (Intern) August 2016 — January 2017

Singapore University of Technology and Design (SUTD), Singapore

- Utilized Deep Learning and Machine Learning models to identify image semantic similarities.
- Researched and analyzed about new semantic definition for images with vector representation.

Teaching Assistant

December 2012 — June 2013

Magro Higher Education Center, Sri Lanka

- Taught Advanced Level (High school) Combined Mathematics.
- Designed course materials including study problems and exams.

ACADEMIC RESEARCH AND PROJECTS

Final Year Research - SAASbot

December 2018

Dept. of Electronic and Telecom. Eng., University of Moratuwa, Sri Lanka

- Scalable Autonomous Agronomical Smartbot (SAASbot) aims at automating farming activities (planting seeds, watering, fertilizing, weed removal) while providing a scalable robotic platform for personal to medium scale farming.
- Designed and developed a novel mobile platform for the farming robot.
- Project Supervisors: Dr Peshala Jayasekara , Dr Thilina Lalitharatne

Image to Logical Form - Deep Learning

August 2016 – January 2017

ISTD, Singapore University of Technology and Design (SUTD), Singapore

- Examined different methods of image and word logical representation methods and measured accuracy of each methods.
- Researched about new method for image representation with logical form.
- Developed system that describe a image in logical form using Convolution Neural Networks and Recurrent Neural Networks.
- Project Supervisors: Assistant Professor Lu Wei

Processor Design - Verilog HDL/FPGA

June 2016

Dept. of Electronic and Telecom. Eng., University of Moratuwa, Sri Lanka

- Researched, designed and implemented a MIC2 based processor for image down-sampling using FPGA Spartan 6 FPGA board.
- Technologies used: Verilog HDL, VHDL, Matlab and Simulink, Xilinx ISE design suite 14.7.

IOT based Pet Care System

April 2016

Dept. of Electronic and Telecom. Eng., University of Moratuwa, Sri Lanka

- Developed with the capability for the users to control the supply of water and food for pets over the INTERNET as well as monitor the consumption of food and water of pets. Each pet was distinctively identified using RFID technology.

Gender Voice Recognition System - Verilog HDL/FPGA

September 2015

Dept. of Electronic and Telecom. Eng., University of Moratuwa, Sri Lanka

- A Digital Signal Processing Project which takes a person's voice as input to the Digi-lentinc Zybo board and using filters to recognize gender of the person.

USB compatible NRZ Optical Transceiver

August 2015

Dept. of Electronic and Telecom. Eng., University of Moratuwa, Sri Lanka

- Implemented a half duplex data transceiver with a speed of 5 Kbps speed.

Electronic Signal Generator

May 2015

Dept. of Electronic and Telecom. Eng., University of Moratuwa, Sri Lanka

- Implemented using AD9850 module and made separate circuits for variable amplitude, offset and chopping.

Yagi-Uda Antenna

Feb 2015

Dept. of Electronic and Telecom. Eng., University of Moratuwa, Sri Lanka

- Design and implemented a Yagi-Uda antenna to receive a certain frequency range which was tested to receive a local television broadcast.

PUBLICATIONS

- Achala Athukorala, Nipuna Ranasinghe, **Kosala Herath**, Peshala Jayasekara, Thilina Dulantha Lalitharatne; "Scalable Autonomous Agronomical Smartbot", 14th

**TECHNOLOGY
SKILLS**

Operating Systems: Windows, MacOS, Ubuntu, CentOS

Programming Languages: C/C++, Java, JavaScript, Ballerina

Scripting languages: Python, MATLAB, Shell, MSDOS batch

Database Management Languages: SQL, SiddhiQL

Frameworks: TensorFlow, Theano, Caffe, Torch, ConvNet

Operations Technologies: AWS Cloud Services, Docker, Helm, Jenkins, GitHub

Web Technologies: AngularJS, NodeJS, React, Bootstrap

Design Tools: AutoCAD, OrCAD, Proteus Design Suite, SOLIDWORKS

Other Tools: Arduino, Simulink, Altium Designer, Mikro C, LTspice

**OTHER SKILLS
& INTERESTS**

Language Skills

English (Full Professional Proficiency), Sinhala (Native or Bilingual Proficiency)

Interests

Robotics, Radar and Navigation Systems, Astronomy and Astrophysics

REFERENCES

Prof. Malin Premaratne

Professor and Vice President, Academic Board,
Monash University,
Australia

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Dr. Tian Yu Goh

Sessional Lecturer,
Monash University,
Australia

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