KITHMIN WICKRAMASINGHE

Graduate Electronic Engineer specialized in Biomedical Engineering

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EDUCATION

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

Department of Electronic and Telecommunication Engineering, University of Moratuwa

Jan 2016 – Feb 2020 Moratuwa, SRI LANKA

Final Year Project title: Development of a Cost-effective sEMG Sensor System for controlling Bionic Arms and other Digital Technologies

- Final GPA: 3.81 (First Class)

G.C.E Advanced Level Examination

D.S. Senanayake College, Colombo 07

Jun 2012 – Sep 2015 Colombo, SRI LANKA

Senior Deputy Head Prefect of the Year 2014/2015

College Senior Colours - Basketball : U-17 'A' Div Championship 2010

Most Outstanding Student of the English Medium Stream at College Prize Giving of 2014

EXPERIENCE

Graduate Research Assistant

Premium-UoM R&D Laboratory for Biomedical Technologies

Mar 2020 – Present Moratuwa, SRI LANKA

Supervisor - Dr. Nuwan Dayananda (Director)

Project - Wearable Non-Invasive Blood Glucose Monitoring Device

Research Intern, Artificial Intelligence R & D Team

Telexistence Inc.

Jun 2018 – Dec 2018 Tokyo, JAPAN

Supervisor - Dr. Charith Fernando

Project - Applications of Machine Vision and Real-time Object Detection in Industrial Robotics

- Worked on training instance segmentation models (MASK-RCNN) and object detection models (faster-RCNN, SSD) on large image datasets.
- Carried out using python as well as C++ to implement tensorflow object detection models as well as some work using the Jetson TX2 to accelerate the inference models.
- Created a simple version of an automatic dataset annotation tool to be used within a lightbox.

Visiting Instructor

Department of Electronic and Telecommunication Engineering, University of Moratuwa

Oct 2019 – Present Moratuwa, SRI LANKA

- EN1093 - Laboratory Practice I
- EN2022 - Digital Electronics
- EN4563 - Robotics

MY LIFE PHILOSOPHY

"Extremely passionate about learning new concepts and helping make a difference in this world by uplifting healthcare and enriching human lives through innovative technology."

ACHIEVEMENTS

Champions (Undergraduate)
Sri Lankan Robotics Challenge 2017

1st Runner Up (Novice Category)
Hulftsdorp Inter-University Debating Tournament 2016

2nd Runner Up
Mora Invitational Basketball Tournament 2016

Honorary Mention (Top 15)
IEEE ComSoC Student Competition held for IEEE GLOBECOMM 2019

Finalist (Top 10)
CILT Ideathon 2020 - International Virtual Competition for Covid-19

Bronze Award (Undergraduate)
Innovate FPGA 2018 Global Contest – APJ (Asia Pacific) Regional Finals

Finalist (Top 4)
IEEE IAS Student Robotics Demo. Contest 2018 – Portland, USA

Sri Lankan Team Member
ABU Robocon Competetion 2019 – Ulaanbataar, Mongolia

SKILL PROFILE

Design Thinker | Keen eye for detail | Passionate Leader & Motivator | Excellent Comm. Skills | Responsible | Multi-tasker | Critical Thinking Mindset

C++ | python | Eagle | Solidworks | AutoCAD | Bio-Signal Processing | Statistical Analysis & Machine Learning | Embedded Systems | STM32 | Altium

SELECTED PROJECTS

Designing a Cost-Effective Dry Contact sEMG Sensor System for Controlling a Bionic Hand

Final Year Undergraduate Research Project (4 Member Group)

Feb 2019 – Jan 2020 Moratuwa, SRI LANKA

Project Supervisors: Dr. Simon Lind Kappel and Dr. Thilina Lalitharatne

The goal is to develop a cost-effective solution for individual finger based wireless interaction using sEMG technology, for amputees and all other users. This device is aimed to be a revolutionary new wearable technology with many applications, mainly being for Bionic Hand Control.

ABU Robocon 2019 – Asia Pacific Robot Contest

MORABotics: Robotics Society - University of Moratuwa

Feb 2019 – Aug 2019 Ulaanbataar, MONGOLIA

I was a member of the Sri Lankan Undergraduate team which participated for the ABU Robocon 2019 competition. Our team developed two robots; an omni directional Manual RF controlled robot which had hydraulic mechanisms for shooting out a regifoam clock and another autonomous vision based quadruped robot.

Fully SMD maze solving robot for SLIIT Micromouse 2019

Self Initiated and Funded

June 2019 – Sep 2019

I developed a fully SMD based micromouse for solving the task of SLIIT Micromouse Competition 2019. The robot was built using a STM32f405RGT micro controller and was measured at 9.8cm by 8.2cm in size.

Bionic Humanoid Arm and EMG recording device using RPi

Self Initiated and Funded

Dec 2018 – Mar 2019

Created a low-cost device and circuit using AD623 for obtaining Biopotentials using a R-Pi protoboard for recording EMG Signals. Bionic Hand was completely 3-D printed and developed using nylon strings and servo motors mounted on the arm, which could be wireless controlled.

Automatic Plant Disease Recognition Mobile Device

4-Member Group Initiated and Funded

Sep 2017 – Mar 2019

Completed in November 2017. Recognized as a ***Best Project at National Techno Awards and SLTC INSYS 2017***.

PUBLICATIONS

Conference Proceedings

- De Silva, Ashwin et al. “Real-Time Hand Gesture Recognition using Temporal Muscle Activation Maps of Multi-Channel sEMG Signals”. In: ICASSP 2020 - IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Barcelona, Spain, 2020, pp. 1299-1303.
- Naim, Asma M. et al. “Low-cost Active Dry-Contact Surface EMG Sensorfor Bionic Arms”. In: SMC 2020 - IEEE International Conference on Systems, Man, and Cybernetics (SMC) 2020. Submitted, May 2020.

LEADERSHIP SKILLS

Treasurer
UoM Gavel Club for 2019/20

Asst. Online Promotions Manager
UoM Gavel Club for 2018/19

Vice President
English Debating Community of 2016/17

Awards and Registrations Committee
Speech Olympiad X 2016 and XI 2017

Participant
Speech Olympiad X 2016

Volunteering
Conducted Workshops on Autonomous Robots and Battle Robots for University Students

LANGUAGES

English ●●●●●

Sinhala ●●●●●

Japanese ●●○○○

REFEREES

Dr. Nuwan Dayananda
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@ Biomedical Engineering, Department of Electronic and Telecommunication Engineering, Faculty of Engineering, University of Moratuwa
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Dr. Simon L. Kappel
Final Year Project Supervisor
@ Biomedical Engineering, Department of Electronic and Telecommunication Engineering, Faculty of Engineering, University of Moratuwa
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Dr. Peshala Jayasekara
Senior Lecturer & Training Coordinator
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