

## Ramith Hettiarachchi

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### PERSONAL STATEMENT

*An enthusiastic undergraduate who finds smart ways of accomplishing a task, while learning something completely new on his journey. He shares these experiences with the world through his [blog](#).*

### RESEARCH INTERESTS

Machine Learning, Signal Processing, Data Science, Robotics.

### EDUCATION

#### University of Moratuwa, Sri Lanka

*Oct 2017 - present*

*B.Sc. Eng (Hons.) Electronics & Telecommunication Engineering*

- **Semester 1: Dean's list (SGPA : 4.12)**
- **Semester 2: Dean's list (SGPA : 4.04)**
- **Semester 3: Dean's list (SGPA : 3.97) - CGPA : 4.033/4.2**
- Modules undertaken: Fundamentals of Computer Organization & Design, Robotics, Calculus, Differential Equations, Methods of Mathematics, Linear Algebra, Numerical Methods, Signals & Systems, Digital Signal Processing.

#### Ananda College, Colombo 10, Sri Lanka

*Jan 2002 - Aug 2016*

*General Certificate of Education Advanced Level in Physical Science Stream (University Entrance)*

- 3 A (High Distinction) passes

*General Certificate of Education Ordinary Level (Junior High School)*

- 9 A (High Distinction) passes

### STANDARDIZED TESTS

- SAT —**1400/1600** (Math 800 — EBRW 600)
- SAT Subject Tests
  - Math Level 2 —**800/800**
  - Physics —**800/800**
- TOEFL iBT —**107/120**

### EXPERIENCE

#### Co-Director IT

*Aug 2019 - present*

*Rotaract Club of University of Moratuwa*

- Integrated *Analytics* and [URL Shortening](#) to the Club to signify the importance in capturing data points to take strategic decisions regarding Club's online presence and making connections with other International Rotaract Clubs.

- Led the development team to create the Are You Ready? 2019 Official web application to manage 1000+ final year undergraduates and assign them to companies for interviews.

#### ScholarX - Mentee

*May 2019 - Sep 2019*

ScholarX is a program aimed at providing mentoring support to a selected pool of High Potential undergraduate students based in Sri Lanka by a Sri Lankan expert currently engaged with one of the world's top universities or Fortune 500 companies.

**I was mentored by Dr. Rukshan Batuwita who is a Data Scientist at Google Sydney.**

## RESEARCH PROJECTS

### **Combing Object Detections of Stereo Images**

2019 Jan - present (**Ongoing**)

*Supervised by Dr. Sadeep Jayasumana, Research Scientist, FiveAI*

Investigated different aspects of combining object detections between pairs of stereo images, after applying the same object detector on both images separately, thus improving the precision and recall. Experiments were carried out with the KITTI - 2D object detection dataset.

### **Generalising Object Detectors**

2019 July - present (**Ongoing**)

*Supervised by Dr. Vibhav Vineet, Researcher, Microsoft Research*

A research done to quantify the effect of inferencing object detectors trained on a particular dataset, on another dataset. The aim of this would be to see, to what extent does object detectors generalize when the dataset changes.

### **Realtime Sign Language Translation to Speech Using a DNN**

2019 July - Nov

*Department of Electronic and Telecommunication, University of Moratuwa*

*Self supervised project*

Development of a solution capable of mapping the EMG signals obtained by an Arm to American Sign Language Gestures using a machine learning model. For high performance inference, The DE-10 Nano field-programmable gate array is used.

More Info: [Project Page](#)  [\[Github Repo\]](#)

#### **Awards:**

- **Iron Award** at the **APAC & Japan Regional Finals of Innovate FPGA Design Contest 2019**
- Selected to **IEEE YESIST12 Grand Finale**
- Winner of **IntelliHack**

*“The InnovateFPGA is a global FPGA design contest where teams from around the world compete as they invent the future of Artificial Intelligence with Terasic and Intel.”*

### **RF Based Drone Detection and Jamming System**

2019 August (**Ongoing**)

*Department of Electronic and Telecommunication, University of Moratuwa*

*Supervised by Dr.Chamira Edussooriya, Dr.Ranga Rodrigo, Eng.Kithsiri Samarasinghe*

With the growing security threat from Unmanned Aerial Vehicles (UAVs) (specially micro-UAVs as they are undetectable to current military radar systems) this project is done to design an RF based omni-directional drone detection and jamming system for military purposes.

## OTHER PROJECTS

- **LICRAWM 1.5.4** - A robot capable of Line Following, Color Detection, Ramp Climbing, Maze Solving and Water Transferring.
  - In addition to the robot, developed a robot visualizer, which replicates robot orientation, distance travelled, Time of Flight(ToF) readings on a web browser[\[ !\[\]\(6c63a1144094e62a6968227fa9175cd8\_img.jpg\) GitHub Repo\]](#) **Includes custom PCB, Robot Visualiser open sourced**
- **Online Forum for GCE Advanced Level Students** - A place where students can ask questions in [\[forumac.org\]](#)
- Pulse Sensor [\[Github Repository\]](#)
- Lux Meter - A project carried out for the analog electronics module

## SKILLS

**Languages:** Sinhalese (Native) & English (TOEFL iBT 107/120, 🎧: 28, 🎧: 24, 🖋️: 28, 📖: 27)

**Programming skills:** C, C++, Python, p5.js

**Technical skills:** MATLAB, Mathematica, Jupyter, Tensorflow, Scikit-learn, Altium, Tableau, Multisim, Git, Latex

**Other skills:** Leadership (Sports / Multi-disciplinary Volunteer Teams), Team Work

## HONORS AND AWARDS

★ 1<sup>st</sup> Place (SRI LANKA): **IEEEExtreme 13.0. World Rank 48th out of 4103 Teams. (2019)**

★ 1<sup>st</sup> Place: #HashCode Online Qualification Round in Sri Lanka (2019) **Organized by Google**

★ Represented University of Moratuwa at the **International Mathematics Competition - 2018**

★ Spirit of Service Award: Outstanding Commitment to Rotaract Club of University of Moratuwa

★ 3<sup>rd</sup> Place: at the **International Schools Software Competition 2014** Organized by SEARCC representing Sri Lanka Team A

★ **International Olympiad in Informatics (IOI) 2014** - Sri Lankan Team Reserve

★ Special Award: for being the Youngest Finalists at the Google I/O Hackathon 2015

★ Winner: All Island Schools Inventions Competition 2010, organized by Sri Lanka Association for the Advancement of Science

★ Winner: 3 consecutive years (2014 to 2016) at the Code Experts programming competition organized by IEEE Student branch of University of Moratuwa

★ Bronze Medal: Junior Inventor of the Year Competition 2010 organized by Institute of Engineers Sri Lanka

## EXTRA - CURRICULAR ACTIVITIES

### Community Service & Volunteer Experience

- Vice President, at the Makers Club - Makerspace, American Center Colombo - Organizing Committee MakerFair 2019, Colombo - Mentored school students as to how to present their innovations at the MakerFair.
- Member, (2017 - present), Co-Director IT (2019/20), at Rotaract Club of University of Moratuwa. The largest Rotaract Club of Sri Lanka which organizes the largest number of projects per year in the domains of Community Service, Professional Development, Club Service & International Service.
- Co-Chairperson, Advanced Robotics Workshop for School Students 2019 - A one day workshop held with the intention of enhancing student knowledge in the domain of Robotics at the Department of Electronic and Telecommunication Engineering, University of Moratuwa.

### Sports & Games

- Shito-Ryu Karate - Red Belt
- Captained the School Chess Team (Under 12) and became the 1st Runner up at the All Island Inter School Chess Championship 2008 and received a board prize.

## REFERENCES

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