

Jameel Hassan

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EDUCATION

University of Peradeniya, Sri Lanka

Nov 2016 - Jul 2020

Bachelor of Science in Engineering, Electrical & Electronic Engineering,

CGPA: 3.61/4.0

Summary of modules:

Linear Algebra · Calculus · Probability

Operations Research · Optimization · Communication Theory

Non Linear & Multivariable controls · Discrete Time Control Systems

Signals & Systems · Advanced Signal Processing · Machine Intelligence

Online courses

Coursera - Stanford University

- Machine Learning

Coursera - University of Toronto

- Introduction to Self Driving Cars

- State estimation and localization for self driving cars

In progress

Coursera - deeplearning.ai

- First 4/5 courses (Neural networks, CNNs, Structuring Machine Learning projects)

Coursera - University of Alberta

- Fundamentals of Reinforcement Learning

In progress

Trinity College Kandy, Sri Lanka

GCE A/L Physical Sciences, 4As

RESEARCH INTERESTS

Robotics · Autonomous Systems: Perception, Navigation, Localization

Machine Learning · Reinforcement Learning · Computer Vision

PUBLICATIONS

[J]: Journal [C]: Conference [NP]: Non peer reviewed

Umar Marikkar, **A. S. Jameel Hassan**, Mihitha S. Maithripala, Roshan I. Godaliyadda, Parakrama B. Ekanayake and Janaka B. Ekanayake, “Modified Auto Regressive Technique for Univariate Time Series Prediction of Solar Irradiance” [\[Link\]](#),
2020 15th IEEE International Conference on Industrial and Information Systems (ICIIS) [C]

A. S. Jameel Hassan^{*}, Umar Marikkar^{*}, G.W. Kasun Prabath, Aranee Balachandran, W.G. Chaminda Bandara, Roshan I. Godaliyadda, Parakrama B. Ekanayake, Janaka B. Ekanayake, “A Sensitivity Matrix approach for Centralized Active Reactive Power Management of PV Systems integrated LV network”,
Energies, MDPI
Under Review [J]

Gihan Jayatilaka^{*}, **Jameel Hassan**^{*}, Umar Marikkar, Rumali Perera, Suren Sritharan, Harshana Weligampola, Mevan Ekanayake, Roshan Godaliyadda, Parakrama Ekanayake, Vijitha Herath, G.M. Dilshan Godaliyadda, Anuruddhika Rathnayake, Samath Dharmaratne, Janaka Ekanayake, “Use of Artificial Intelligence on spatio-temporal data to generate insights during COVID-19 pandemic: A Review”
[Medrxiv](#) [NP]

Gihan Jayatilaka, **Jameel Hassan**, Suren Sritharan, Roshan Godaliyadda, Parakrama Ekanayake, Vijitha Herath, Janaka Ekanayake, "Utilizing temporal graphs to improve computer vision-based social distance monitoring"
Sustainable Cities Journal, Elsevier.
Submitted to Journal [J]

Jameel Hassan, Suren Sritharan, Gihan Jayatilaka, Roshan Godaliyadda, Parakrama Ekanayake, Vijitha Herath, Janaka Ekanayake, "Hands Off: A Handshake Interaction Detection and Localization Model for COVID-19 Threat Control"
2021 16th IEEE International Conference on Industrial and Information Systems (ICIIS).
Submitted to Conference [C]

RESEARCH PROJECTS

Computer vision system to create a threat level assessment using CCTV footage for COVID-19 (*Computer Vision, Temporal graphs*)

August 2020 - Present

Application of end to end deep learning models for object and action detection along with localization tasks to quantify social distancing measure violations. The information is expressed in a temporal graph for analysis and outputs a threat level measure for COVID-19 for the CCTV footage.

Centralized control of PV inverter powers to mitigate voltage violations in the distribution grid (*Smart Grid, Optimization*)

August 2020 - Present

Developing a centralized control of active and reactive powers of PV inverters to mitigate voltage violations in the distribution grid due to excess solar influx. The centralized control is achieved by implementing a novel two stage optimization using particle swarm optimization for power grid applications.

Optimized economic dispatch for Micro Grid using solar prediction (*Smart Grid, Machine Learning, Signal Processing*)

June 2019 - June 2020

Designed an optimised scheduling and control algorithm to predict the power outputs of the stochastic renewable systems such as solar and wind plants. The net output power is aggregated to supply a load demand from a specific energy market.

COURSE PROJECTS

Smart haptic headphone

Course: Engineering Product Design

November 2018

Designed a smart headphone that automatically responds to haptic sensor feedback. An Attiny13 microcontroller was used, which was programmed using Arduino Uno.

Eagle, ArduinoC, ATTiny13

Automatic light controller

Course: Embedded Systmes Design

June 2018

Designed an automatic light controller which keeps count of people within a room to switch ON/OFF the lights. A PIC16f84A programmed using assembly language was used to control the lights.

Assembly language, PIC

Colour sensing robot arm (Video)

Course: Electronic Instrumentation

June 2017

Designed a color sensing robotic arm that picks and places the object in predefined locations based on the color of the object.

Arduino Uno, Arduino C

EXPERIENCE

Electronic Engineering Intern

Vega Innovations, Sri Lanka

Feb 2019 - May 2019

- Tested and troubleshooted the electric vehicle fast charging power module.
 - Completed the wiring design for the hydroponics rack used for smart plant growth.
- Eagle, PowerSim*

Volunteer Teaching Assistant

Course: Introduction to Electrical Engineering

Feb 2020 - July 2020

- Conducted lab tutorials for course material on statistics and probability.

Undergraduate Project Mentor

Forecasting of dengue epidemic using deep learning

July 2020 - July 2021

- Mentored a group of 3 final year undergraduate students.
- The research project was focused on using signal processing and deep learning approaches to forecast epidemics.

AWARDS & ACHIEVEMENTS

- **GCE A/L Best results** Trinity College Kandy, Sri Lanka 2014 - 4As.
- Finalist of Eng. EW Karunarathne Award for the Best Undergraduate Project in Electrical Engineering. Organised by Institute of Engineers, Sri Lanka (IESL).
- Finalist of IntelliHack 2019 - Machine Learning Hackathon organised by IEEECS University of Colombo School of Computing (UCSC).
- Finalist of “International Energy and Electricity Market Business Decision Simulation Competition 2019” organised by Shanghai University of Electric Power. One of the three teams representing Sri Lanka.

SKILLS

Languages: MATLAB, Python, \LaTeX , C, Assembly

API: OpenCV, Keras, TF, Git

Other: Eagle, OpenDSS, Algorithms & Data structures

Soft skills: Writing ([Medium](#)), Event Moderation, Presenting

EXTRA CURRICULAR

Global Shaper- Kandy Hub, Under World Economic Forum.

(Mar 2020 - Sep 2020)

Basketball, University of Peradeniya, Sri Lanka.

2017/2018

Drama Society, University of Peradeniya, Sri Lanka.

2016-2018

Football - 1st XI, Trinity College Kandy. Sri Lanka.

2012-2014

School Officer(Prefect), Trinity College Kandy, Sri Lanka

2013/2014

REFEREES

Professor Janaka Ekanayake (Thesis Supervisor)

BSc Eng, PhD(UMIST), CEng, FIEEE, FIET, FIESL

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Faculty of Engineering, University of Peradeniya.

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Dr Roshan Godaliyadda (Thesis Supervisor)

BSc Eng, PhD(NUS), MIEEE, MIESL

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