

Jameel Hassan

LINKEDIN  · GOOGLE SCHOLAR  · GITHUB  · WEBSITE 
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EDUCATION

Mohamed Bin Zayed University of Artificial Intelligence, UAE *Aug 2022 - Present*
Master of Science, Computer Vision
GPA: 4.0/4.0

Summary of modules:

Human & Computer Vision · Artificial Intelligence

Mathematics - Probability and Statistical inference

University of Peradeniya, Sri Lanka

Nov 2016 - Jul 2020

Bachelor of Science in Engineering, Electrical & Electronics,

CGPA: 3.65/4.0 (Final year GPA 3.87/4.0)

Summary of modules:

Optimization · Operations Research - Algorithms

Linear Algebra · Calculus · Probability · Communication Theory

Machine Intelligence · Signals & Systems · Advanced Signal Processing

Non Linear & Multivariable controls · Discrete Time Control Systems

RESEARCH INTERESTS

Machine Learning · Deep Learning · Computer Vision

Vision-Language models · Self/Unsupervised Learning ·

PROJECTS

CLIP adversary (Computer Vision, Vision-Language models, Adversarial attacks)

November 2022

Designed an adversarial attack for the CLIP model using text, dropping the model accuracy to nearly 15% on CIFAR-10, CIFAR-100 and to 50% in Caltech101 datasets.

Lightweight pose estimation (Computer Vision, Pose estimation)

[Github link](#)

November 2022

Designed a lightweight pose estimation model modifying the 2 stage stacked hourglass network. Achieved a 79% drop in GFLOPS with almost no drop in accuracy using architectural and loss function modifications.

Wordle Solver

[Self exploration](#) / [Github Link](#)

Solving the wordle game using an information theoretic approach. Inspired by the 3b1b video.

Visualizing RNNs

[Self exploration](#) / [Github Link](#)

Visualizing and analyzing neuron firing in RNNs. Inspired by “Visualizing RNNs” research paper by Karpathy et al.

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

August 2020 - September 2021

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

EXPERIENCES

Machine Learning Engineer

Veracity AI, Sri Lanka (in collaboration with WENN)

October 2021 - May 2022

- Algorithm design for vehicle damage detection to automate the insurance claiming process.
- Designed a car localization model using Mask RCNN; reducing false positives in damage detection by 12%.
- Researched and analyzed curriculum learning approach for training improvement.

Research Associate

Faculty of Engineering, University of Peradeniya

August 2020 - September 2021

- Research focusing on computer vision techniques to mitigate COVID-19, and voltage violation problem due to solar PV penetration in smart grids. Research projects 1 and 2 listed below.

Volunteer Teaching Assistant

Course: Introduction to Electrical Engineering

Feb 2020 - July 2020

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

Electronic Engineering Intern

Vega Innovations, Sri Lanka / Eagle, PowerSim

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.

PUBLICATIONS

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

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 (**IF 3.0**)

Published [J]

Gihan Jayatilaka*, **Jameel Hassan***, Suren Sritharan*, Roshan Godaliyadda, Parakrama Ekanayake, Vijitha Herath, Janaka Ekanayake, "Holistic Interpretation of Public Scenes Using Computer Vision and Temporal Graphs to Identify Social Distancing Violations"
Applied Sciences, MDPI (**IF 2.67**)

Published [J]

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"

2020 15th IEEE International Conference on Industrial and Information Systems (ICIIS).

Published [C]

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).

Published [C]

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]

AWARDS & ACHIEVEMENTS

- **Best Practical Impact Paper** in the 16th IEEE ICIIS Conference.
- **GCE A/L Best results** Trinity College Kandy, Sri Lanka 2014 - 4As.
- Varsity Basketball Colours Award for exceptional performance.
- Finalist of Eng. EW Karunaratne 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).

SKILLS

Python · Pytorch · Tensorflow · OpenCV · \LaTeX · MATLAB
C · Assembly · Bash · Git · Data Structures & Algorithms
Research · Writing ([Medium](#)) · Event Moderation · Public speaking

EXTRA CURRICULAR

Student Representative , Computer Vision Department. MBZUAI	<i>(Sep 2022 - Present)</i>
Global Shaper- Kandy Hub , Under World Economic Forum.	<i>(Mar 2020 - Sep 2020)</i>
Project Nenathambara : Course developer Link .	<i>(Mar 2021 - Present)</i>
Basketball , University of Peradeniya, Sri Lanka.	<i>2017/2018</i>
Drama Society , University of Peradeniya, Sri Lanka.	<i>2016-2018</i>
Football - 1st XI , Trinity College Kandy. Sri Lanka.	<i>2012-2014</i>
High School Prefect , Trinity College Kandy, Sri Lanka	<i>2013/2014</i>
