

Jameel Hassan

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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
Deep Learning · Visual Object Recognition & Detection

Thesis: Self-supervised learning for vision-language models.
Supervised by: [Prof Salman Khan](#) & [Prof Fahad Khan](#)

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:

Linear Algebra · Calculus · Probability · Communication Theory
Machine Intelligence · Signals & Systems · Advanced Signal Processing

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*

- Designed a computer vision based system to provide a threat level metric based on social distancing metrics for COVID-19 using CCTV footage.

Teaching Assistant

Course: Introduction to Electrical Engineering *Feb 2020 - July 2020*

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

Machine Learning · Deep Learning · Computer Vision
Vision-Language models · Self/Unsupervised Learning ·

PROJECTS

Text-guided adversary for CLIP (Vision-Language models, Adversarial attacks)

[Github link](#) *November 2022*

- Designed an adversarial attack for the CLIP model using text as adversary.
- Reduced model accuracy to 15% on CIFAR-10, CIFAR-100 and beyond 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 minimal drop in accuracy using architectural and loss function modifications.

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 was expressed in a temporal graph for analysis and processed to output a threat level measure for COVID-19 for the CCTV footage.

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.

PUBLICATIONS

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**)

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**)

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).

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).

AWARDS & SKILLS

- Full scholarship MSc student at MBZUAI.
- **Best Practical Impact Paper** in the 16th IEEE ICIIS Conference.

Python · Pytorch · Tensorflow · OpenCV · C · Optimization · Research
Data Structures & Algorithms · Writing ([Medium](#)) · Public speaking

EXTRA CURRICULAR

Global Shaper- Kandy Hub, Under World Economic Forum.
Project Nenathambara: Volunteer project course developer [Link](#).

(Mar 2020 - Sep 2020)

(Mar 2021 - Present)