

JAMEEL HASSAN

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Available for internship February 2024 through July 2024

Education

Mohamed Bin Zayed University of Artificial Intelligence

Aug 2022 – July 2024

Master of Science (Research) in Computer Vision

CGPA 3.94/4.0

- Thesis: *Test-Time Adaptation of Foundational Vision-Language Models*
- Graduate research student supervised by Prof. Salman Khan and Prof. Fahad Khan
- Relevant Coursework: Object Recognition and Detection, Deep Learning, Parallel & Distributed Machine Learning

University of Peradniya

Nov 2015 – July 2020

Bachelor of Science in Engineering, Electrical & Electronics

CGPA 3.65/4.0 (Top 10%)

Research Interests

- Multi-modal learning and self-supervised learning for video understanding
- Efficient adaptation techniques of foundation models for increased robustness and generalization

Publications *gscholar*

- **AS Jameel Hassan***, Hanan Gani*, Noor Hussein, Uzair Khattak, Muzammal Naseer, Fahad Khan, Salman Khan, “Align Your Prompts: Test-Time Prompting with Distribution Alignment for Zero-Shot Generalization”. *NeurIPS 2023*
- Gihan Jayatilaka*, **AS Jameel Hassan***, Suren Sritharan* et al, “Holistic Interpretation of Public Scenes Using Computer Vision and Temporal Graphs to Identify Social Distancing Violations”. *Applied Sciences, MDPI 2021*
- **AS Jameel Hassan**, Suren Sritharan, Gihan Jayatilaka et al. “Hands Off: A Handshake Interaction Detection and Localization Model for COVID-19 Threat Control”. *IEEE ICIIS 2021*
- **A. S. Jameel Hassan***, Umar Marikkar*, et al. “A Sensitivity Matrix Approach for Centralized Active Reactive Power Management of PV Systems integrated LV network”. *Energies, MDPI 2020*

Projects

Prompt Align | *Test-Time Adaptation, Vision Language models, Foundation models*

May 2023

- Designed a zero-shot test-time prompt learning strategy, handling the distribution shift in test data for vision language models. — Accepted at NeurIPS 2023

Language Supervision for 3D Instance Segmentation | *Vision-Language models, Instance Segmentation*

April 2023

- Analyzed and established the potential of language supervision using CLIP for 3D point-cloud instance segmentation and its effectiveness in the open-world setting.

Language as an Adversary for CLIP | *Vision-Language models, Adversarial Attacks*

December 2022

- Designed an adversarial attack on the CLIP model using language as an adversary, dropping the model accuracy below 50% on CIFAR10, CIFAR100 and Caltech101.

YOLOngv8 | *Long Tail Distributions, Object Detection*

April 2023

- Adapted the YOLOv8 model for long tail object detection on the iSAID aerial images dataset using a prototype based contrastive loss with dynamic calibration.

Video Restoration | *Blind Face Restoration, Video Restoration*

December 2023

- Adapting image based face restoration model to videos — in progress

Parallel & Distributed ViT | *Parallel and Distributed ML, Vision Transformers*

December 2023

- Designed a parallel and distributed implementation of the ViT-B/16 architecture.
- Implemented a pipeline paralleled version, combined with distributed data parallel strategy.

Experience

Intelligent Visual Analytics Lab (IVAL), MBZUAI

August 2022 – Present

Graduate Research Assistant

Abu Dhabi, UAE

- Explored the robustness and generalizability of CLIP in image classification, and adaptability to instance segmentation.
- Co-supervised new masters students at IVAL lab, working on Vision-Language models for video understanding.
- Teaching assistant for AI701 (Introduction to Artificial Intelligence) at MBZUAI. Responsible for course material preparation and mentoring three course projects.

Inception Institute of Artificial Intelligence

AI Research Intern

May 2023 – July 2023

Abu Dhabi, UAE

- Blind Face Restoration using VQGANs, resolved edge cases such as viewpoint change and closed eyes setting.

Veracity AI

Machine Learning Engineer

Oct 2021 – May 2022

Colombo, Sri Lanka

- Designed Machine Learning algorithms for vehicle damage detection to automate vehicle insurance claiming.
- Designed a car localization component using Mask RCNN reducing False positives in damage detection by 12%.
- Researched and analyzed curriculum learning approach for improvement in training time.

Faculty of Engineering, University of Peradeniya

Research Associate

Aug 2020 – Sep 2021

Kandy, Sri Lanka

- Designed a computer vision based pipeline to identify COVID-19 violations using CCTV footage.
- Designed a centralized control of active and reactive powers of PV inverters to mitigate the voltage violation problem in the distribution grid due to excess solar influx.

Technical Skills

Programming: Python, C, MATLAB, Assembly

Technologies/Frameworks: PyTorch, Tensorflow, OpenCV, Parallel ML systems, Git, Linux

Honours & Awards

- MBZUAI full scholarship master's student.
- Best practical impact paper in the 16th IEEE ICIIS Conference 2021.

Leadership / Extracurricular

- Computer Vision Department Student Representative, Graduate Student Council (Sep 2022 - Sep 2023). Organized a bootcamp program for the Fall 2023 students, amassing an attendance of over 80 students.
- Member of Varsity Basketball team, University of Peradeniya (2018/2019)
- High School Prefect (2013/2014)