JAMEEL HASSAN

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Education

Mohamed Bin Zayed University of Artificial Intelligence, Abu Dhabi, UAE **Aug 2022 – June 2024**
Master of Science (Research) in Computer Vision *CGPA 3.94/4.0*
- Thesis: *Test-Time Adaptation of Foundational Vision-Language Models*
- Relevant Coursework: Object Recognition and Detection, Deep Learning, Parallel & Distributed Machine Learning

University of Peradeniya, Sri Lanka **Nov 2015 – July 2020**
Bachelor of Science in Engineering, Electrical & Electronics *CGPA 3.65/4.0 (Top 10%)*

Projects

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.

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 for robust image understanding. — NeurIPS 2023

YOLOngv8 | *Long Tail Distributions, Object Detection* **April 2023**
- Adapted the YOLOv8 model for long tail object detection on the iSAID aerial images dataset.
- Used a prototype based contrastive loss with dynamic calibration for long tail nature of dataset.

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.
- Showed effectiveness by dropping the model accuracy below 50% on CIFAR10, CIFAR100 and Caltech101 datasets.

Experience

Inception Institute of Artificial Intelligence **May 2023 – July 2023**
AI Research Intern *Abu Dhabi, UAE*
- Resolved edge cases in Blind Face Restoration using VQGANs, such as viewpoint change and closed eyes setting.
- Extending image face restoration to videos.

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 image understanding.
- Teaching assistant for AI701 (Introduction to Artificial Intelligence) at MBZUAI.
  Responsible for course material preparation and mentoring three course projects.

Veracity AI **Oct 2021 – May 2022**
Machine Learning Engineer *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.

Technical Skills

Programming: Python, C, MATLAB, Assembly
Technologies/Frameworks: PyTorch, Tensorflow, OpenCV, Parallel ML systems, Git, Linux

Publications

- **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

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)