MUHAMMAD MAAZ

muhammad.maaz@mbzuai.ac.ae, +971-52-5326156
Github Profile: mmaaz60, LinkedIn: mmaaz60

PERSONAL PROFILE

A professional with hands-on experience in working on research, engineering, deployment and monitoring phases of Deep Learning driven Computer Vision products. Ability to initiate and participate in design level discussions and communicate ideas both orally and in the form of technical reports.

EDUCATION

Mohamed bin Zayed University of Artificial Intelligence, UAE *Dec 2020 - Continue*
M.Sc. Computer Vision
CGPA: 4.0/4.0

University of Engineering and Technology, Pakistan *Sep 2014 - Aug 2018*
B.Sc. Electrical Engineering
CGPA: 3.705/4.0

WORK EXPERIENCE

Hazen.ai *July 2020 - Dec 2020*
Computer Vision Engineer

Developed a traffic light phase detection solution for road safety applications. I trained a network to learn embeddings for traffic light phases (red, yellow, green and black) using triplet loss. The network was robust enough to handle different road scenarios. The product was deployed on the NVIDIA Jetson devices using TensorRT.

Confiz Limited *Aug 2019 - July 2020*
Computer Vision Engineer

Led Shopper Value - Computer Vision Team where I was responsible for technological evolution and scalability of Computer Vision Product, Visitor Tracking.

- **Visitor Tracking:** A Person Detection and Tracking solution to identify the engaged and ignored areas of a retail store. Our utmost challenge was to process 7 to 10 video streams on an i5/i7 CPU with fair enough accuracy. We experimented with Yolov3 and pruned it to get the desired speed and accuracy balance. We used Network Distillation to train camera specific small neural networks. We also focused to effectively utilize the CPU cores and use optimized inference frameworks like Intel's OpenVino for edge deployment.

Confiz Limited *Jun 2018 - July 2019*
Computer Vision Engineer

Designed and developed a product named 'Visitor Profile'; a face recognition solution which generates visitor's and buyer's demographics and visit frequency data for the brick and mortar retail stores. FaceNet like architecture was being used to prepare face encodings.

Mentor, A Siemens Buisness *Jun 2017 - Aug 2017*
Trainee Software Engineer

During the stay, I developed small multithreaded applications, created Linux distribution following the LFS document, built customized Embedded Linux for Raspberry Pi using Yocto project, learned about cross-compilation and wrote a GPIO device driver for Raspberry Pi embedded board.

PUBLICATIONS

MViTs Excel at Class-agnostic Object Detection *Nov 2021*

Muhammad Maaz, Hanoona Rasheed, Salman Khan, Fahad Khan, Rao M. Anwer, Ming-Hsuan Yang

In this work, we explore the potential of the recent Multi-modal Vision Transformers (MViTs) for class-agnostic object detection. Our extensive experiments across various domains and novel objects show the state-of-the-art performance of MViTs to localize generic objects in images. We also develop an efficient and flexible MViT architecture using multi-scale feature processing and deformable self-attention that can adaptively generate proposals given a specific language query. The paper is available on arxiv.

PROJECTS

Self-supervised Learning for Fine-grained Visual Categorization *May 2021*

The project studies the effectiveness of Self-supervised Learning for Fine-grained classification task. In this work, we explore the usefulness of various pretext tasks, specifically, rotation, pretext invariant representation learning (PIRL), and deconstruction and construction learning (DCL) for Fine-grained classification. The technical report is available on arxiv.

Intelligent Discipline Maintaining System *May 2018*

The project focuses to build a real time discipline violation identifier by processing video and audio feeds. The identified discipline violations are door slamming, whistling and smooking.

SPECIALIZATIONS AND CERTIFICATES

School of Artificial Intelligence *Udacity*

Computer Vision Nano Degree

deeplearning.ai *Coursera*

Deep Learning Specialization

Google Cloud *Coursera*

Machine Learning with TensorFlow on Google Cloud Platform Specialization

Google Cloud *Coursera*

Advance Machine Learning with TensorFlow on Google Cloud Platform Specialization

TECHNICAL STRENGTHS

Computer Sciences	Computer Vision, Deep Learning, Machine Learning
Programming Languages	Python, C, Java
Softwares & Tools	Pycharm, VS Code, MATLAB
ML and DL Frameworks	PyTorch, TensorFlow (basics)

EXTRA-CURRICULAR

- Secretary of Graduate Student Council at MBZUAI
- Former Assistant Vice President Operation at IET UET Chapter
- Member of Education for Every Child (EFE) foundation
- **Sports:** Cricket, Table Tennis, Snooker

REFERENCES

Dr. Salman Khan
Associate Professor
Mohamed bin Zayed University of AI
✉ salman.khan@mbzuai.ac.ae

Dr. Fahad Khan
Associate Professor
Mohamed bin Zayed University of AI
✉ fahad.khan@mbzuai.ac.ae