

MUHAMMAD HUZAIFA

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EDUCATION

Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI)

Master of Science (M.Sc.) in Machine Learning, GPA - 3.73/4.00

Abu Dhabi, UAE

Aug 2022 – May 2024

- Advisor: Prof. Fahad Khan Co-Advisor: Prof. Salman Khan

- Thesis title: Resilience of Vision-Language Models on Object-to-Background Compositional Changes ([link](#))

National University of Science and Technology (NUST)

Bachelor of Science (B.Sc.) in Electrical Engineering, GPA - 3.26/4.00

Islamabad, Pakistan

Sept 2017 – Aug 2021

- Advisor: Prof. Latif Anjum Co-Advisor: Prof. Mansoor Asif

- Thesis title: Gesture to speech recognition system for specially-abled people

RESEARCH INTERESTS

- Represenatation Learning of discriminative and generative Multimodal models (VLMs, LMMs), Efficiency
- Zero-Shot and few-shot adaptation, Semi-Supervised, Self-Supervised Learning, Continual Learning

PUBLICATIONS

* indicates Equal Contribution

- P Gavrikov, W Lin, M.J Mirza, S Jahagirdar, Muhammad Huzaifa, S Doveh, J Glass, H Kuehne
VisualOverload: Visual Reasoning in Complex Scenes | [under review](#)
- Muhammad Huzaifa, Y. Kementchedjhieva. **EFSA: Episodic Few-Shot Adaptation for Text-to-Image Retrieval.** *ICCV 2025 Workshop on Closing the Loop between Vision & Language* | [Paper](#)
- Muhammad Huzaifa*, HS Malik*, M Naseer, S Khan, FS Khan, **ObjectCompose: Evaluating Resilience of Vision-Based Models on Object-to-Background Compositional Changes** *ACCV-2024 (Oral, Top 5.6%)* | [Paper](#) [Code](#)
- R Imam, H Ghani*, Muhammad Huzaifa*, K Nandakumar, **Test-Time Low Rank Adaptation via Confidence Maximization for Zero-Shot Generalization** *WACV-2025* | [Paper](#) [Code](#)
- Muhammad Huzaifa*, R Imam*, MEA Azz, **On enhancing the robustness of Vision Transformers: Defensive Diffusion** *MIUA 2023* | [Paper](#) [Code](#)
- R Imam, Muhammad Huzaifa, N Mansour, SB Mirza, F Lamghari, **Domain Adaptable Fine-Tune Distillation Framework For Advancing Farm Surveillance** | [Paper](#) [Code](#)

RESEARCH EXPERIENCE

Tubingen AI Center, University of Tubingen

Researcher

Mar 2025 – Aug 2025

Tubingen, Germany

- Advisor / Line Manager Prof. Hilde: Worked on Large Vision Language Models

Vision and Language Lab, MBZUAI

Research Associate II

May 2024 – Mar 2025

Abu Dhabi, UAE

- Advisor / Line Manager Prof. Yova: Proposed a few-shot adaptation strategy to tackle hard negatives in text-to-image retrieval for vision-language models under both open-domain and closed-domain settings (ICCV-W 2025)

Intelligent Visual Analytics Lab, MBZUAI

Graduate Research Assistant

Aug 2022 – May 2024

MBZUAI, Abu Dhabi

- Advisor / Line Manager Prof. Fahad: Proposed a novel defense against attack-agnostic adversarial attacks using the denoising capabilities of diffusion models (MIUA 2023)
- Developed a new benchmark to systematically evaluate the robustness of vision-language models against object-to-background compositional changes (ACCV 2024)

Fujairah Research Center

Visiting Researcher

May 2023 – Aug 2023

Fujairah, UAE

- Proposed a two-stage framework combining automated annotation and knowledge distillation to develop a lightweight YOLOv8 model for real-time camel farm monitoring using surveillance video data.

WORK EXPERIENCE

Techlogix

Application Consultant

Mar 2022 – June 2022

Lahore, Pakistan

- Assisted in customer query resolution through a streamlined tracking system, generated MIS reports based on business requirements, and supported the deployment and maintenance of core banking applications.

ProntoDigital

Nov 2021 – Feb 2022

Digital Data Analytics Consultant

Lahore, Pakistan

- Implemented website tracking using Google Analytics and Tag Manager, delivering custom reports that empowered clients to optimize strategies and drive sales growth.

TEACHING & ACADEMIC SERVICES

Teaching Assistance | MBZ University of Artificial Intelligence (MBZUAI), Abu Dhabi

- Deep Learning (AI702) Spring 2024 with Prof. Haris Khan
- Introduction to Machine Learning (ML701) – Fall 2023 with Prof. Rao Anwar
- Foundations of Artificial Intelligence – Fall 2023 with Prof. Samuel Horvath

Conference Reviewing | Reviewer

- ECCV'24, WACV'25, CVPR'25, WACV'26

Conference Volunteer | EMNLP 2022, Abu Dhabi, UAE

- Volunteered at the EMNLP 2022 conference, assisting with on-site logistics and coordination tasks.

HONOURS & AWARDS

- Honorable mention by MBZUAI for my research contributions during masters degree ([link](#))
- ObjectCompose**, my master's thesis, received the Best Student Paper Honorable Mention Award at ACCV. **2024**
- Defensive Diffusion** nominated for the best Paper award, under Abstract Category, at 27th Conference on MIUA **2023**
- Secured **Fully Funded Scholarship** for Graduate School at MBZUAI for MS program in Machine Learning **2022**
- Recognized as 2nd best undergraduate project in Electrical Engineering at NUST **2021**
- Finalist of **Crossroads Emerging Leadership** Program, organized By Harvard University **2021**

SKILLS

Programming Languages: Python(Advanced), C/C++ (basic), C# (basic), Java (Basic)

Machine Learning Frameworks: : PyTorch, TensorFlow, Keras, Scikit-Learn, OpenCV, HuggingFace

Development Tools: Git, VS Code, Visual Studio, PyCharm, Linux

Languages: English (Expert), Hindi (Native), Urdu (Native)

EXTRACURRICULAR AND SOCIAL ACTIVITIES

Crossroads Emerging Leaders Program (CELP) | Finalist, Harvard Business School

- A Harvard-led global initiative aimed at empowering college students through academic development, mentorship, and exposure to entrepreneurial thinking. Worked in a diverse team to design scalable solutions for underdeveloped economies, applying principles of entrepreneurship learned through the program..

Walee | Campus Ambassador

- Led university seminars to promote platform awareness, ran social media campaigns to drive engagement and sales, and collaborated with the product team to inform feature improvements based on user experience.

REFERENCES

- ✉ Fahad Khan (MBZUAI, Linkoping university)
- ✉ Muhammad Haris Khan, (MBZUAI)
- ✉ Salman Khan (MBZUAI, Australian National University)
- ✉ Yova Kementchedjhieva, (MBZUAI)