

Muhammad Akhtar Munir

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Summary

I am currently a Research Associate (Computer Vision) @MBZUAI in Abu Dhabi. Simultaneously, I am pursuing my Ph.D. at ITU. My research focuses on a variety of areas, including Object Detection, Domain Adaptation, Uncertainty Estimation, and Model Calibration. My current research is centering on Domain Adaptation & Generalization, Model Calibration, Weather Modeling, and Remote Sensing.

Experience

- **Research Associate** at Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, UAE.
 - **Duration:** July 2023 – Present (Computer Vision Department, MBZUAI)
- **Research Intern** at Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, UAE.
 - **Duration:** August 2022 – June 2023 (Computer Vision Department, MBZUAI)
- **Research Associate** at Information Technology University (ITU) of Punjab, Lahore, Pakistan.
 - **Duration:** January 2022 – July 2022 (Under Google Research Scholar Award, ITU)
- **Ph.D. Fellow (Student)** at Information Technology University (ITU) of Punjab, Lahore, Pakistan.
 - **Duration:** September 2017 – Present (Lab: Intelligent Machines Lab, ITU)
- **Lab Engineer** at School of Electrical Engineering and Computer Science (SEECS), NUST, Islamabad, Pakistan.
 - **Duration:** November 2013 – August 2017 (Department of Computing, SEECS, NUST)

Publications (Selected)

Sohail Danish, Muhammad Haris Khan, **Muhammad Akhtar Munir**, M. Saquib Sarfraz, and Mohsen Ali. “**Improving Single Domain-Generalized Object Detection: A Focus on Diversification and Alignment**” In IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR 2024**)

Muhammad Akhtar Munir, Salman Khan, Muhammad Haris Khan, Mohsen Ali, and Fahad Khan. “**Cal-DETR: Calibrated Detection Transformer**” In Conference on Neural Information Processing Systems (**NeurIPS 2023**)

Muhammad Akhtar Munir, Muhammad Haris Khan, M. Saquib Sarfraz, and Mohsen Ali. “**Domain Adaptive Object Detection via Balancing between Self-Training and Adversarial Learning**” In IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI 2023, IF=23.6**)

Muhammad Akhtar Munir, Muhammad Haris Khan, Salman Khan, Fahad Khan, “**Bridging Precision and Confidence: A Train-Time Loss for Calibrating Object Detection**”, IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR 2023**)

Muhammad Akhtar Munir, Muhammad Haris Khan, M. Saquib Sarfraz, and Mohsen Ali. “**Towards Improving Calibration in Object Detection Under Domain Shift**” In Conference on Neural Information Processing Systems (**NeurIPS 2022**)

Muhammad Akhtar Munir, Muhammad Haris Khan, M. Saquib Sarfraz, and Mohsen Ali. “**SSAL: Synergizing between Self-Training and Adversarial Learning for Domain Adaptive Object Detection**” In Conference on Neural Information Processing Systems (**NeurIPS 2021**)

Education

Sep'17- Jun'24	Doctor of Philosophy in Computer Science CGPA: 3.50/4.0 (Coursework)	Information Technology University, Lahore
	<i>Courses:</i> Deep Learning, Computer Vision, Machine Learning, Probability & Stats	<i>Thesis:</i> Domain Adaptation for Object Detection
Feb'15- Jun'17	Master of Science in Computer Science CGPA: 3.84/4.0	COMSATS Institute of Information Technology, Islamabad
	<i>Courses:</i> Artificial Intelligence, Digital Image Processing, Algorithms Analysis	<i>Thesis:</i> Ischemic Stroke Lesion Segmentation in MR Sequences Using MLP and SVM
Feb'09- Jan'13	Bachelor of Science in Computer Engineering CGPA: 3.38/4.0	COMSATS Institute of Information Technology, Islamabad

Programming Languages & Tools

- Python
- Deep Learning Frameworks (**PyTorch, Keras, Caffe, JAX**)
- C/C++
- MATLAB
- ArcGIS
- Linux
- Visual Studio Code
- Microsoft Office
- Latex

Services & Honors

- **Reviewer:** CVPR 2024, ICLR 2024, CVPR 2023, ICCV 2023, NeurIPS 2023, ACM Multimedia 2021
- **Awardee:** NeurIPS 2022 & 2023 Scholar Award, CVPR 2023 DEI Award
- **Scholarship:** PhD Fellowship, from Information Technology University, Lahore, Pakistan
- **Summer School:** EEML Summer School, Virtual Budapest, Hungary, 2021

References

Dr Salman Khan, Associate Professor,
Mohamed bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, United Arab Emirates
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Dr Muhammad Haris Khan, Assistant Professor,
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Dr Mohsen Ali, Associate Professor,
Information Technology University (ITU) of Punjab, Lahore, Pakistan
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