

Asif Hussain Khan, Ph.D.

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Short Biography

Asif Hussain Khan is a dedicated researcher with a focus on low-level vision, working to enhance the quality of images and videos using deep learning techniques. His research aims to develop advanced, practical solutions that improve visual data, addressing key challenges in computer vision and artificial intelligence. By bridging the gap between theory and real-world application, his work has meaningful impact in areas such as medical imaging, video surveillance, and multimedia technologies. Passionate about advancing visual processing, Asif continually explores innovative ways to apply deep learning for effective, scalable results. In addition to research, he is actively involved in teaching and mentoring students. He values creating a supportive and engaging learning environment that encourages curiosity, critical thinking, and long-term growth.

Research Interest

Artificial Intelligence, Deep Learning, Computer Vision, Image Processing, Generative AI, Image Restoration, Super Resolution.

Education

- Mar 2022 – Feb 2025 Ph.D., Computer Science and Artificial Intelligence University of Udine, Italy.
Thesis title: *Deep Learning Based Efficient Single Image Super Resolution*.
- Sep 2014 – Dec 2017 M.S Information Technology University of Lahore, Gujrat, Pakistan.
Thesis title: *Violence Detection in images using Machine Learning*.
- Sep 2009 – May 2011 M.Sc. Telecommunication Systems Bahauddin Zakariya University, Multan, Pakistan.
Thesis title: *OPTIX RTN 600 Radio Transmission System Network Planning*.
- Sep 2006 – Dec 2008 B.Sc. Science Bahauddin Zakariya University, Multan, Pakistan.

Funded Projects

- Received funding of €2,000 from the European Union Next-GenerationEU for the project titled "Lightweight Implicit Blur Kernel Estimation Network for Blind Image Super-Resolution".

Professional Experience

- Mar 2025 – Present Postdoc Researcher, University of Udine, Udine, Italy.
- Sep 2024 – Feb 2025 Visiting Research Fellow, Computer Vision Center (CVC), Barcelona, Spain.
- Jan 2015 – Aug 2019 Lecturer, University of Gujrat Sialkot SubCampus, Sialkot, Pakistan.
- Nov 2013 – Dec 2014 Research Assistant, University of Gujrat Sialkot SubCampus, Sialkot, Pakistan.
- May 2013 – Oct 2013 Intern, Xgrid, Islamabad, Pakistan.
- Jan 2012 – Dec 2012 BSS Engineer, Tier Four (Telecommunication Subcone), Multan, Pakistan.

Achievement and Awards

- Recipient of 2022 Italy Scholarship for PhD in Computer Science and Artificial Intelligence.
- Ranked among the top-performing methods in the NTIRE 2024 Super Resolution (x4) Challenge, presented at CVPR 2024.
- Recognized as an Outstanding Reviewer at the European Conference on Computer Vision (ECCV) 2024.

Skills

Programming	Python, C/C++
Libraries/Frameworks	Pytorch, OpenCV, scikit-image, Matplotlib, Seaborn, Wandb, TensorBoard, Pillow, NumPy, SciPy, Pandas.
Tools/Platforms	Git, Pycharm, Jupyter Notebook, Jupyter Lab, Draw.io, Jira, Miro, HPC, SLURM, Docker.
Research Tools	LaTeX, BibTex, EndNote, and Mendeley.
Languages	Strong Reading, Writing and Speaking competencies in English and Urdu.

Selected Courses Taught

- Introduction to Artificial Intelligence
- Programming Fundamentals
- Object Oriented Programming (OOP)

Reviewing Activities

Journal Reviewer	Image and Vision Computing (IF 4), Pattern Recognition (IF 7.6)
Conference Reviewer	Computer Vision and Pattern Recognition (CVPR), European Conference on Computer Vision (ECCV), International Conference on Image Analysis and Processing (ICIAP).

Research Supervision Activities

- Pneumonia Detection in Chest X-rays Using Convolutional Neural Networks
- Crop Disease Detection in Pakistan Using CNNs
- Smart Traffic Sign Recognition for Pakistan: Leveraging Convolutional Neural Networks (CNNs) for Enhanced Road Safety
- Automatic Vehicle License Plate Recognition (ALPR).

Research Publications

Journal Articles

1. A. H. Khan, C. Micheloni, and N. Martinel, "Lightweight prompt learning implicit degradation estimation network for blind super resolution," *IEEE Transactions on Image Processing*, 2024.
2. A. H. Khan, C. Micheloni, and N. Martinel, "Lightweight implicit blur kernel estimation network for blind image super-resolution," *Information*, vol. 14, no. 5, p. 296, 2023.
3. K. Javed, A. H. Khan, and L. Tubbassum, "Critical analysis of software development methodologies based on project risk management," *International Journal of Academic Research in Business and Social Sciences*, vol. 9, no. 12, pp. 253–263, 2019.
4. K. Javed, F. Talib, M. Iqbal, and A. H. Khan, "Managing and reducing handoffs latency in wireless local area networks using multi-channel virtual access points," *International Journal of Advanced Computer Science and Applications*, vol. 10, no. 3, 2019.
5. F. Ahmed, A. H. Khan, J. Mehmood, *et al.*, "Wireless mesh network," *International Journal of Computer Science and Information Security (IJCSIS)*, vol. 14, no. 12, 2016.
6. M. Mehmood, K. Sattar, A. H. Khan, and M. Afzal, "Load balancing approach in cloud computing," *J Inform Tech Softw Eng*, vol. 5, no. 153, p. 2, 2015.

Conference/Workshops Proceedings

- 1 Z. Chen, Z. Wu, **A. H. Khan**, et al., "Ntire 2024 challenge on image super-resolution (x4): Methods and results," in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, Jun. 2024, pp. 6108–6132.
- 2 **A. H. Khan**, C. Micheloni, and N. Martinel, "Idenet: Implicit degradation estimation network for efficient blind super resolution," in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2024, pp. 6065–6075.
- 3 **A. H. Khan**, R. M. Umer, M. Dunnhofer, C. Micheloni, and N. Martinel, "Lbkenet: Lightweight blur kernel estimation network for blind image super-resolution," in *International Conference on Image Analysis and Processing*, Springer, 2023, pp. 209–222.

Conferences/Workshops/Summer Schools

Conferences

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|-----------------------------|--------------------------------------------------------------------------------------|
| Jun, 17 2024 – Jun, 21 2024 | IEEE/CVF Conference on Computer Vision and Pattern Recognition CVPR'24, Seattle, US. |
| Sep, 12 2023 – Sep, 14 2023 | International Conference of Image Analysis and Processing ICIAP'23, Udine, Italy. |

Workshops

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| June, 17 2024 – June, 21 2024 | New Trends in Image Restoration and Enhancement workshop NTIRE'24 (in conjunction with CVPR 2024), Seattle, US (Poster Presentation). |
| Aug, 2017 | Qec Training Workshop On "Capacity Building Training PROGRAM for Faculty. University of Gujrat, Sialkot SubCampus, Sialkot, Pakistan. |

Summer Schools

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| Jul, 7 2024 – Jul, 13 2024 | International Computer Vision Summer School (ICVSS), Sicily, Italy |
| Sep, 2023 – Sep, 8 2023 | International Summer School on Machine Vision (VISMAL), Padova, Italy. |
| Jul, 3 2023 – Jul, 7 2023 | International Summer School on Artificial Intelligence (AI-DLDA), Udine, Italy. |
| Jul, 4 2022 – Jul, 8 2022 | International Summer School on Artificial Intelligence (AI-DLDA), Udine, Italy. |

References

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