

Education

- 2nd Mar-20 **Sejong University**, Seoul, South Korea.
18th Feb-22
 - M.S in Computer Science and Engineering
 - Thesis: Face Pyramid Vision Transformer
 - GPA: 4.25/4.5, [Presentation Link](#)

1st Feb-14 **Federal Urdu University of Arts, Sciences & Technology**, Karachi, Pakistan.
23rd Apr-18
 - B.S. in Computer Science
 - Title: Framework for Passenger Seat Availability Using Face Detection in Passenger Bus
 - GPA: 3.53/4.0

Publications

- ICML 2025 **CMM Mixup: Context-Aware Multi-Scale Mixup to Improve Uncertainty.**
[Khawar Islam](#), Arif Mehmood, Naveed Akhter
International Conference on Machine Learning (ICML) ([Under Review](#))
- CVPR 2025 **DiffMix: Context-guided Responsible Data Augmentation with Diffusion Models.**
[Khawar Islam](#), Naveed Akhter
In IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2025 ([Under Review](#))
- CVPR 2024 **DiffuseMix: Label-Preserving Data Augmentation with Diffusion Models.**
[Khawar Islam](#), Muhammad Zaigham Zaheer, Arif Mahmood, Karthik Nandakumar
In IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2024
- BMVC 2022 **Face Pyramid Vision Transformer.**
[Khawar Islam](#), Muhammad Zaigham Zaheer, Arif Mahmood
In British Machine Vision Conference (BMVC), 2022
- CVPR 2021 **Image Compression with Recurrent Neural Network and Generalized Divisive Normalization.**
[Khawar Islam](#), Dang Lien Minh, Sujin Lee, Hyeonjoon Moon
In IEEE Conference on Computer Vision and Pattern Recognition Workshop (CVPRw), 2021
- IVCNZ 2021 **Face Recognition Using Shallow Age-Invariant Data.**
[Khawar Islam](#), Sujin Lee, Dongil Han, Hyeonjoon Moon
In Image and Vision Computing New Zealand (IVCNZ), 2021
- IMAVIS 2020 **Person Search: New paradigm of Person Re-Identification: Recent Works.**
[Khawar Islam](#)
In journal of Image and Vision Computing (IMAVIS), Elsevier, 2020

Research and Work Experience

- 1th-April-24 **Senior Research Scientist - GenAI (Part Time)**, Upendi.AI, South Korea.
[Present](#) **Tools:** Stable Diffusion XL Refiner, AnimeGANv2, FLUX, IP-FaceID-Plus, PhotoMaker, Realistic Vision, IP-Adapter, T2IAdapter, ControlNet, ADetailer, EmoStyle
 - Turned a doodler/child face to full character generation with styles (Farmer, CEO, Nurse).
 - Lead team of three developers to build full-fledge product with agile methodology.
 - Introduced first character captioning dataset to train Stable Diffusion in Generative AI domain.
 - Introduced a new Automated diary with specific character generation like Dynamite BTS diary.
 - Meeting with different CEOs and Investor to illustrate the demo and current competition.
 - Data collection processes, ensuring high-quality datasets for training and validating CV models.
 - Mentor junior researchers, and interns, providing guidance on Generative AI domain.
 - Fine-tune Generative AI model on Google Cloud Cloud (GCP) on our private dataset.
 - Research and implement new SOTA methods of image/video generation to make new product.
 - Write research papers, presentation, patent, and present the work at conferences and meetings.

- 4th-Ap-22 **Research Scientist (Full Time)**, Coremax Technology, South Korea.
Present **Tools:** YOLO v8, ResNet, LLMs, Chat GPT, GPT-Neo, Claude, Dataset Construction (10 M), Harm Content Recognition, Log Analysis, DocTR, PaddleOCR, EasyOCR, PC Usage Monitoring
- Design, develop, and advanced Computer Vision (CV) algorithms for the different tasks.
 - Publish research in high-impact scientific journals and present them at international conferences.
 - Design and execute experiments to test the performance of AI models under various conditions.
 - Work closely with software engineers to integrate CV into real-world applications.
 - Collaborate with researchers and institutions to drive innovation and develop new methods.
 - Data collection processes, ensuring high-quality datasets for training and validating CV models.
 - Mentor junior researchers, and interns, providing guidance on best practices in CV research.
 - Conduct training sessions and workshops to share knowledge and skills with colleagues.
 - Plan and execute research projects, ensuring timely delivery of milestones and deliverables.
- 15th Ap-19 **Research Associate**, NUCES-FAST, Karachi, Pakistan.
- 16th Mar-20 **Tools:** VGG-Face, Google FaceNet, OpenFace, Facebook DeepFace, DeepID, ArcFace, Dlib.
- Performed research and development to solve missing children problems across the country.
 - Develop and implement computer vision algorithms and systems to solve complex problems.
 - Optimize CV models for real-time applications, object detection, tracking, and classification.
 - Perform code reviews and provide constructive feedback to ensure high-quality software.
 - Data collection and preprocessing of missing children from Sarim Burney Trust International.
 - Teaching and mentoring research students to conduct research related to specific topic.
 - Write clear and concise technical documentation and present solutions to stakeholders.
 - Evaluate the performance of CV models and develop methodologies for model comparison.
 - Design and implement scalable, modular, and efficient computer vision software architectures.
- 1st Aug-18 **Research Assistant**, Information System Research Group, FUUAST Karachi.
- 15th Feb-19 **Tools:** C#, Visual Studio, DevExpress for UI Design
- Planning and execution of research projects, e.g literature reviews, data collection, and analysis.
 - Assisting in the preparation of research proposals, grant applications, and progress reports.
 - Maintaining complete research records, including databases and other documentation.
 - Analyze research data using statistical tools and present findings in a clear and concise manner.
 - Improve research paper writing and story-line to help junior researchers in their papers.
 - Teach undergraduate students how to think about new idea and selection of topic.
 - Providing training and mentoring to teaching assistants and junior lecturers.
 - Participating in training opportunities and initiatives at the institution.
- 1st Mar-17 **Senior Executive**, Axact, Karachi, Pakistan.
- 30th Jul-18 **Tools:** Swift, Xcode Editor, Alamofire, RealmSwift, SDWebImage, MessageKIT
- Designing, developing, and maintaining iOS applications using Swift programming languages.
 - Writing clean, efficient, and maintainable code that follows best practices and coding standards.
 - Troubleshooting and debugging issues, and implementing fixes to ensure smooth functioning.
 - Participate in Agile development process, attend sprint planning, stand-ups, and retrospectives.
 - Providing technical guidance and mentorship to junior team members, as needed.
 - Worked on MVC and singleton pattern, real-time push notifications, Firebase, realm
 - Optimizing computer vision algorithms for performance and memory usage on mobile devices.
 - Maintaining and improving existing codebases, including refactoring and bug fixing.
 - Developing and maintaining image processing pipelines and data processing workflows.

Honors and Achievements

- 2021 **NeurIPS Support**, Sponsored by Naver Labs Europe, DeepMind and Google AI.
- 2020 **Full Tuition Fee Waiver**, School of Computer Engineering, Sejong University.
- 2020 **Prof. Stipend**, CVPR Lab, Sejong University.
- 2020 **Conference Travel Grant**, Ministry of Planning Commission, Pakistan.
- 2016 & 2017 **Most Valuable Professional Award**, C-SharpCorner, India.
- 2016 **Laptop Awarded, Prime Minister Pakistan Program**, Karachi, Pakistan.
- 2022 **OxML School**, Oxford Machine Learning Summer School.
- 2022 **NYU AI School**, New York Artificial Intelligence School, USA.
- 2021 **MLSS**, Machine Learning Summer School, Taipei, Taiwan.
- 2021 **EEML**, Eastern European Machine Learning Summer School.

Conferences

Attendee	36 th Association for the Advancement of Artificial Intelligence, (AAAI), Feb. 2022. 35 th Conference on Neural Information Processing Systems, (IJCAI), Dec. 2021. 9 th International Conference on 3D Vision (3DV), Dec. 2021. 32 nd British Machine Vision Conference, (BMVC), Nov. 2021. 35 th Association for the Advancement of Artificial Intelligence, (AAAI), Feb. 2020. International Conference on Learning Representations, (ICLR), May. 2020. 27 th IEEE International Conference on Image Processing, (ICIP), April. 2020. IEEE/CVF Conference on Computer Vision and Pattern Recognition, (CVPR), 2020. 38 th International Conference on Machine Learning, (ICML), June. 2020. 30 th International Joint Conference on Artificial Intelligence, (IJCAI), August. 2020. 25 th International Conference on Pattern Recognition, (ICPR), Feb. 2020.
Presenter	2 nd Workshop on Big Data and Cloud Computing, (NCBC), Dec. 2020.

Technical Skills

IP Algorithms	Segmentation, Filter Design, Noise Removal, Compression, Super Resolution
Object Det	SSD, YOLO-NAS, YOLOX, Faster R-CNN, DETR, GroundingDINO, YOLOv8
DL techniques	Tracking, Optical Flow, Particle Filtering, Pose Estimation
CV Algorithms	Image Classification and Detection, Tracking, Siamese Networks
Soft. Control	JIRA, Agile, Scrum and GIT or Subversion
Lang	Python, Keras, JAVA, Unix Shell Scripting
Deployment	Docker and Kubernetes
Editor	Visual Studio Code, PyCharm, Jupyter Notebook
OS	WINDOWS 10, Ubuntu 18.04, Ubuntu 20.04, MAC OSX
APIs	PyTorch, TensorFlow, Caffe, OpenCV, Flask, Django

Recent Research/Industrial Projects

2025	High-Quality Video Generation from Diffusion Models (Text-2-Video).
2025	Image Restoration and Enhancement with GANS and Diffusion Models.
2024	Image Editing Instructions with Diffusion Models (Image-to-Image).
2024	Foundation Multimodal Vision Language Models (CLIP, Visual ChatGPT).
2024	Vision Language Models To Extend Unseen Domains & DomainShift.
2023	Reliable Lightweight Real-Time Open-Vocabulary Object Detection.
2023	DeepKorOCR: Korean Character Recognition with Advanced Neural Networks.

References

Dr. Zaigham Zaheer

Research Fellow, Mohamed bin Zayed
University of Artificial Intelligence, UAE
Research Mentor
✉ zaigham.zaheer@mbzuai.ac.ae

Prof. Arif Mahmood

Information Technology University,
Lahore, Punjab
Research Mentor
✉ arif.mahmood@itu.edu.pk

Prof. Muhammad Atif Tahir

National University of Computer &
Emerging Sciences, Karachi, Pakistan
Research Mentor
✉ atif.tahir@nu.edu.pk