

# Tajamul Ashraf

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## Official Address

Department of Computer Vision  
MBZUAI, Masdar City  
Abu Dhabi; 50819, UAE

## Permanent Address

H-1253, New Colony  
Karan Nagar, Srinagar  
Kashmir; 190010, India

## RESEARCH INTERESTS

I am interested in addressing the challenges faced by multimodal AI systems across reinforced, generative, and perceptual understanding tasks, particularly when confronted with Out-Of-Distribution (OOD) scenarios.

## EDUCATION

Indian Institute of Technology, (IIT Delhi) New Delhi, India

Master of Science (M.S by Research) in Computer Science June 2024

GPA: 9.28/10.0 Department Rank: 1<sup>st</sup>

Advisor: [Prof. Chetan Arora](#), Co-Advisor: [Prof. \(Dr.\) Krithika Rangarajan](#)

Thesis title: *Domain Adaptation in Breast Cancer Detection from Mammograms.*

National Institute of Technology, (NIT Srinagar) Srinagar, Kashmir

Bachelors of Technology in Information Technology July 2022

GPA: 8.34/10.0

Advisor: [Prof. Janibul Bashir](#)

Thesis title: *Robust DL Models for Analyzing the Impact of Coherent Climatic Factors.*

## RESEARCH EXPERIENCE

Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI) Abu Dhabi, UAE

Research Associate II Jan 2025 - Current

Line Manager(s): [Prof. Salman Khan](#) and [Prof. Fahad Khan](#).

- Working on **multimodal reasoning** in LLM agents, including post-training techniques for reasoning, vision-language alignment, and reinforcement learning-based agent interaction with multimodal LLMs.

Microsoft Research (MSR) Bangalore, INDIA

Research Intern July 2024 - Dec 2024

Host Advisor(s): [Dr. Mohit Jain](#) and [Dr. Prachi Jain](#).

- Worked on Knowledge Graph-based Information Retrieval with RAG.
- Automated LLM pipelines with a semi-structured knowledge base (SKB) for medical chatbots.

- Introduced **Cataract-MSICS** dataset and proposed a phase-conditioned method with pseudo-labeling for surgical tool segmentation.

AI & Robotics Technology Park, I-Hub (ARTPARK)

Bangalore, INDIA

Visiting Student

Dec 2021 - May 2022

Advisor: [Prof. Raghu Krishnapuram](#).

- Developed an automated washroom cleaning robot **RoboJanitor**.
- Designed robust models for pose estimation, detection, classification, and SLAM.
- Developed 3D pose models and REST APIs for production.

Indian Institute of Science (IISc)

Bangalore, INDIA

Research Intern

Mar 2021 - Sep 2021

Advisor(s): [Prof. S.N. Omkar](#) and [Prof. Balaji Prabu](#).

- Developed a novel human pose comparison model to assist yoga teachers during online classes.
- Utilized BlazePose to accurately mark key points of both teachers and students during live sessions.
- Designed a feedback mechanism to compare poses and provide real-time corrections to students.

## WORK EXPERIENCE

LEENA AI

Remote(WFH), USA

Software Developer I

May 2022 - Oct 2022

Line Manager: [Anand Prajapati](#)

- Executed full stack software development for the Product and ML team.
- Worked on cross-functional projects, architecting solutions to meet client requirements.

BSNL ALTTC

Delhi, INDIA

Cybersecurity Trainee

Jan 2019 - Mar 2019

Line Manager: [R.K. Pandit](#)

- Troubleshooted and resolved network issues related to Wi-Fi, bluetooth.
- Implemented security measures and optimized network performance in wireless environments.


## PUBLICATIONS

(\* indicates joint first authors, + indicates my role as mentor)

**A3** *LLM Post-Training: A Deep Dive into Reasoning Large Language Models*.  [Code](#)  [Paper](#).

Komal Kumar\*, **Tajamul Ashraf\***, Omkar Thawakar, Rao Muhammad Anwer, Hisham Cholakkal, Mubarak Shah, Ming-Hsuan Yang, Phillip HS Torr, Fahad Shahbaz Khan, Salman Khan

Under Review (arXiv 2025).

**C7** *Enhancing Climate Change Understanding: A Novel Deep Learning Framework with the Climate Change Parameter Model*.  [Paper](#).

**Tajamul Ashraf**, Janibul Bashir

International Conference on Modeling, Simulation & Intelligent Computing (MoSICom 2024).

- A2 *Phase-Informed Tool Segmentation for Manual Small-Incision Cataract Surgery.*  [Paper](#).  
Bhuvan Sachdeva, Naren Akash, **Tajamul Ashraf**, Simon Mueller, Thomas Schultz, Maximilian WM Wintergerst, Niharika Singri Prasad, Kaushik Murali, Mohit Jain  
Under Review (arXiv 2024).
- A1 *FATE: Focal-modulated Attention Encoder for Temperature Prediction.*  [Code](#)  [Paper](#).  
**Tajamul Ashraf**, Janibul Bashir  
Under Review (arXiv 2024).
- C6 *D-MASTER: Mask Annealed Transformer for Unsupervised Domain Adaptation in Breast Cancer Detection from Mammograms.*  [Code](#)  [Paper](#).  
**Tajamul Ashraf**, Krithika Rangarajan, Mohit Gambhir, Richa Gauba, Chetan Arora  
Medical Image Computing and Computer Assisted Intervention (MICCAI 2024).
- C5 *HF-Fed: Hierarchical based customized Federated Learning Framework for X-Ray Imaging.*  
 [Code](#)  [Paper](#).  
**Tajamul Ashraf**, Tisha Madame  
MICCAI Workshop 2024 (Deep-Brea3th: Deep Breast Workshop on AI and Imaging for Diagnostic and Treatment Challenges in Breast Care). **Best Student Paper Award!**
- C4 *TransFed: A way to epitomize Focal Modulation using Transformer-based Federated Learning.*  
 [Code](#)  [Paper](#).  
**Tajamul Ashraf**, Fuzayil Mir, Iqra Altaf Gillani  
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV 2024).
- C3 *PoseWatch: Advancing Real-Time Human Pose Tracking and Juxtaposition with Deep Learning.*  
 [Paper](#).  
**Tajamul Ashraf**, BV Balaji Prabu, OS Jois Narasipura  
Computer Vision and Image Processing (CVIP 2023).
- C2 *Climate Change Parameter Dataset (CCPD): A Benchmark Dataset for Climate Change Parameters in Jammu and Kashmir.*  [Paper](#).  
**Tajamul Ashraf**, Janibul Bashir  
International Conference on Data Science and Applications (ICDSA 2023).
- C1 *An integral computer vision system for apple detection, classification, and semantic segmentation.*  
 [Code](#)  [Paper](#).  
**Tajamul Ashraf**, Nair Abbas, Mohammad Haseeb, Nadeem Yousuf, Janibul Bashir  
International Conference on Machine Vision (ICMV 2022).
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#### TEACHING and ACADEMIC SERVICES

Teaching Assistant | Indian Institute of Technology, Delhi

- Computer Vision (COL780) | Spring 2024 with [Prof. Chetan Arora](#)
- Computer Vision for Robotics (JRL780) | Spring 2024 with [Prof. Chetan Arora](#)

- Computer Science Fundamentals and Programming (COL100) | Fall 2023 with [Prof. Chetan Arora](#) and [Prof. Vireshwar Kumar](#)
- Special Topics in Machine Learning (COL870) | Spring 2023 with [Prof. Anurag Mittal](#)
- Data Structures and Algorithms (COL106) | Fall 2022 with [Prof. Naveen Garg](#) and [Prof. Ashish Chiplunkar](#)

#### Conference/Journal Reviewing | Reviewer

- ACM MM'25 | MICCAI'25, 24 | WACV'25, 24 | CVIP'23, 22 | HPEC'23
- IEEE Transactions on Parallel and Distributed Systems

#### Conference Volunteer | Organizer

- Serving as a program volunteer for CVIP conference in IIT Jammu, INDIA

#### Invited Talk | Speaker

- Presented two talks on Research directions, Placements, and Internships to undergrad IT students at the National Institute of Technology Srinagar.

#### Pilot Mentorship Program | Mentor

- I actively mentor undergraduate students from the graduating batches. I guide them on their final year thesis and independent projects in pursuing potential research publications.

Students (\* denotes current)

3. [Suhaib Salmani](#)\* | NIT Srinagar | 2025  
Thesis: Foundational Models and Masked Learning for efficient Medical Object Detection.
2. [Rajes Manna](#) \* | NIT Srinagar | 2025  
Thesis: Source Free Domain Adaptation using Adversarial Class Aware Teacher.
1. [Asrar ul Haq](#) | NIT Srinagar | 2024  
Thesis: Transformer-Based Unsupervised Domain Adaptation in a Federated Setup.

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#### HONORS and AWARDS

- Awarded \$500 compute grant from alphaXiv for my contributions in LLM research.
- Nominated as Diversity Intern by Microsoft Canada.
- Honorable mention by IIT Delhi for research contributions during my Master's degree.
- Awarded MICCAI 2024 Travel Grant.
- Awarded IIT Delhi Endowment Grant 2024.
- Won India's largest National Entrepreneurship Challenge at IIT Bombay.
- Gold Microsoft Student Learn Ambassador for NIT Srinagar.

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#### TECHNICAL SKILLS

Languages: Python, C, C++, MATLAB, SQL, HTML/CSS, Javascript

Frameworks: PyTorch, TensorFlow, Keras, Scikit-Learn, OpenCV, HuggingFace, Flask

Developer Tools: Git, Docker, VS Code, Visual Studio, PyCharm, Linux

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## EXTRACURRICULAR and SOCIAL ACTIVITIES

### Gold [Microsoft Student Learn Ambassador](#)

Actively promoted technology learning and fostered a community of student developers in Kashmir. Organized workshops, webinars, and hackathons to encourage student innovation and collaboration.

### Founder [Ralith Milth](#)

Established an NGO focused on raising awareness and support for drug abuse prevention and rehabilitation. Spearheaded community outreach programs with local organizations to support affected individuals.

### Co-founder [AT Talks](#)

Hosting a podcast discussing the intersection of technology and society, featuring expert insights. Managed guest interviews, content strategy, and promotion to grow the podcast's reach and impact.

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## REFERENCES

Prof. Salman Khan [✉](#)

Prof. Chetan Arora [✉](#)

Prof. Iqra Altaf Gillani [✉](#)

Prof. Rao Anwer [✉](#)

Prof. Krithika Rangarajan [✉](#)

Prof. Janibul Bashir [✉](#)