

Javed Ahmad

Research Interests:

- o 3D Computer Vision, Deep Learning, Multimodal 3D Scene Perception, 3D Reconstruction
- o Robot Motion Planning and Manipulation for 3D Vision

Experiences

02/2024 – present

PostDoc

Research Lab: Center for Cultural Heritage Technology, IIT, Italy

- o Collaborating with [CTE-Genova](#) for 3D artifact reconstruction via robotic manipulators
- o Developed an algorithms for precise pose tracking of complex shaped artifacts

11/2020 –

Doctoral Researcher

12/2023

Research Lab: Pattern Analysis and Computer Vision (PAVIS), IIT, Italy

- o Developed novel LiDAR-Camera fusion scheme, improving accuracy and reliable 3D perception
- o Contributed to 3D object localization for [MEMEX Project](#) from crowd-sourced images
- o Performed LiDAR-Camera calibration procedures

07/2017 –

Research Assistant

10/2020

Research Lab: CACTUS, ITU, Pakistan

- o Worked on SfM 3D reconstruction
- o Worked on vibration signal processing via machine learning for fault diagnosis in rotating machinery

2017 – 2019

Teaching Assistant

University: Information Technology University (ITU), Pakistan

- o **Graduate Course:** Machine Learning
- o **Undergrad Courses:** Calculus & Analytical Geometry, Power System Analysis

Programming and Skills

Python: Expert (Pytorch, Numpy, Pandas, Scipy)

Computer Vision: Expert (OpenCV, Open3D, Nerfstudio, BPY, Torchvision, MMCV)

Robotics: Experienced (ROS2, Pinocchio, Pyroboplan, UR-RTDE)

Manipulators: Experienced (UR5e, UR3e)

3D Perception: Advanced (mmdetection3D, LiDAR-Camera Fusion Techniques)

Parallel: Experienced (Franklin-HPC: NVIDIA Tesla V100, A100)

Computation:

Others: Knowledgeable (Blender, C++, MATLAB)

Practicing: NVIDIA Omniverse & Isacc Sim , Moveit2

Education

11/2020 –12/2023

Ph.D in Computational Vision, Automatic Recognition and Learning

Thesis Title: Multimodal 3D Scene Perception

Research Lab: Pattern Analysis and Computer Vision (PAVIS), IIT, Italy

University: University of Genoa (UniGe), Italy

IIT - Center for Cultural Heritage Technology, Venice, Italy

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🌐 [javed-ahmad-4692384a/](https://www.linkedin.com/in/javed-ahmad-4692384a/) • 📷 [Javed Ahmad](#)

- 2017 – 2019 **Master of Science in Electrical Engineering**
University: Information Technology University (ITU), Pakistan
Major Subjects: Advanced Mathematics, Machine Learning, Control System Theory, Digital Signal Processing
- 2013 – 2017 **Bachelor of Science in Electrical Engineering**
University: University of Central Punjab, Pakistan
Major Subjects: Signal Processing, Image Processing, Control Systems, Electronics

Publications

- 2024 **Ahmad, J.**, Frascella, S., Dassiè, F., et al. Automated Artifacts Position and Orientation Estimation in Cultural Heritage. IEEE/ASME Conference on Mechatronic, Embedded Systems and Applications. [[Teaser](#)] [[Presentation](#)]
(*Paper in proceedings soon, copy can be requested from me*)
- 2023 **Ahmad, J.**, Del Bue, A. mmFUSION: Multi-modal Fusion for 3D Object Detection. [[arxiv link](#)] [[Presentation](#)]
- 2022 **Ahmad, J.**, Toso, M., Taiana, M., James, S., Del Bue, A. Multi-view 3D Objects Localization from Street-level Scenes. International Conference on Image Analysis and Processings. [[Springer DOI](#)] [[GitHub code](#)] [[Presentation](#)]
- 2022 Castro, E., ..., Ahmad, J., et al. Fill in the Blank for Fashion Complementary Outfit Product Retrieval. Journal of Machine Vision and Applications. [[Springer DOI](#)]
- 2020 **Ahmad, J.**, Shamshad F., et al. Deep Unsupervised Deblurring Approach for Improving Crops Disease Classification. Poster at CVPR Workshop on Agriculture-Vision.

Summer Schools

- Jul 2023 **International Computer Vision Summer School (ICVSS), Sicily**
School Theme: From Perception to Action
My Poster: 3D Scene Perception from Single to Multi-modalities [[Poster link](#)]
- Jul 2022 **Vision and Sports Summer School (VS3), Prague**
School focused on advanced computer vision techniques in 2D and 3D object recognition, multi-modal learning, 3D neural rendering.
- Jul 2021 **Vision Understanding and Machine Intelligence Summer School (VISUM), Porto**
Winner of project competition on fashion product retrieval using deep learning. [[Presentation link](#)]
- Jul 2020 **Eastern European Machine Learning Summer School (EEML)**
Winner of 3D historic landmark reconstruction proposal in unconference research competition. [[Presentation link](#)]

Awards & Prizes

1st prize in VISUM 2021 and EEML 2020 competitions
MS Fellowship granted by ITU, Pakistan

Community Service

Former member of Akhuwat Foundation, Pakistan, involved in charity fundraising. Currently exploring more community engagement opportunities.