

ACHLESHWAR LUTHRA

Objective: Computer Vision Internships for Summer 2023

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Education

Carnegie Mellon University - School of Computer Science

Dec 2023

Master of Science in Computer Vision

Pittsburgh, PA

Birla Institute of Technology and Science Pilani, Pilani Campus

May 2022

Bachelor of Engineering in Electrical and Electronics Engineering

Pilani, India

Experience

University of Illinois Urbana Champaign

Feb - Dec 2021

Research Intern (mentor: Prof. Narendra Ahuja)

Champaign, IL

- Extracted 3D models of pigs from videos using self-supervised learning, neural mesh renderer, and re-projection loss.
- Synthesized a dataset that included segmentation masks to complement re-projection loss-based training algorithm.
- Delivered results on pig tracking and pig 2D pose-estimation, contributing to a CVPRW'21 ORAL paper on multi-view tracking.

University of California Berkeley

Jan - Mar 2021

Research Intern (mentor: Prof. Jitendra Malik)

Berkeley, CA

- Evaluated algorithms such as MeshRCNN, 3D-R2N2, Occupancy Networks, and GenRe for single-view 3D reconstruction of inanimate objects on a novel dataset - Amazon-Berkeley Objects dataset.
- Executed preprocessing and benchmarking experiments on ABO dataset, which was accepted to CVPR'22.

CSIR-Central Electronics Engineering Research Institute

Oct - Dec 2020

Research Intern

Rajasthan, India

- Applied Inflated 3D ConvNets and Temporal Segment Networks for the task of Fall Detection.
- Designed a compressive sensing framework to obtain compressed measurements of video sequences as spatio-temporal input.
- Implemented two reconstruction architectures using densely connected neural networks and Convolutional Neural Network (ReconNet), to retrieve original images from compressed measurements.

Selected Publications

- ABO : Dataset and Benchmarks for Multi-View Object Understanding

Jasmine Collins, Shubham Goel, Kenan Deng, **Achleshwar Luthra**, Leon Xu, Erhan Gundogdu, Xi Zhang, Tomas F Yago Vicente, Thomas Dideriksen, Himanshu Arora, Matthieu Guillaumin, and Jitendra Malik

IEEE / CVF Computer Vision and Pattern Recognition Conference 2022

- Eformer : Edge Enhancement based Transformer for Medical Image Denoising

Achleshwar Luthra*, Harsh Sulakhe*, Tanish Mittal*, Abhishek Iyer, and Santosh Yadav

Computer Vision for Automated Medical Diagnosis, ICCV 2021 Workshop

- Tracking Grow-Finish Pigs Across Large Pens Using Multiple Cameras

Aniket Shirke, Aziz Saifuddin, **Achleshwar Luthra**, Jiangong Li, Tawni Williams, Xiaodan Hu, Narendra Ahuja, Angela Green-Miller, and Matthew Caesar

CV4Animals : Computer Vision for Animal Behavior Tracking and Modeling In conjunction with Computer Vision and Pattern Recognition 2021 ORAL

- ARFDNet: An efficient activity recognition fall detection system using latent feature pooling

Santosh Kumar Yadav, **Achleshwar Luthra**, Kamlesh Tiwari, Hari Mohan Pandey, Shaik Ali Akbar

Journal: Knowledge-Based Systems; Impact Factor - 8.038

Skills

Programming Languages: Python, C

Softwares/Tools: MATLAB, Anaconda, VS Code, Jupyter Notebook, Github

Frameworks: PyTorch, Tensorsflow, Keras, Numpy, Pandas, OpenCV

Service

- Reviewer – Winter Conference on Applications of Computer Vision (WACV) 2023