Anshul Shah

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Education

Johns Hopkins University **2020–Present**
Ph.D in Computer Science
Advisor : Prof. Rama Chellappa
Transferred from UMD College Park

University of Maryland, College Park **2018–2020**
M.S. in Computer Science *4.0/4.0*
Advisor : Prof. Rama Chellappa

Indian Institute of Technology Madras, Chennai **2013–2018**
B.Tech.(Honors) & M.Tech. in Electrical Engineering *9.39/10*
Minor in Robotics
Advisor : Prof. A.N. Rajagopalan

Current Research

Improving video representations, Pose based action recognition, Salient clip selection, Geometric Deep learning

Publications and Patents

Pose and Joint-Aware Action Recognition
Anshul Shah, *Shlok Mishra, Ankan Bansal, Jun-Cheng Chen, Rama Chellappa, Abhinav Shrivastava*
Under Submission

Learning Visual Representations for Transfer Learning by Suppressing Texture
Shlok Mishra, ***Anshul Shah****, Ankan Bansal, Abhinav Shrivastava, Abhishek Sharma, David Jacobs*
Under Submission

Bringing Alive Blurred Moments
Kuldeep Purohit, ***Anshul Shah****, A N Rajagopalan*
Conference on Computer Vision and Pattern Recongnition (CVPR) 2019 **(Oral Presentation)**

Attention Driven Vehicle Re-identification and Unsupervised Anomaly Detection for Traffic Understanding
Pirazh Khorramshahi, Neehar Peri, Amit Kumar, ***Anshul Shah*** *and Rama Chellappa*
NVIDIA AI City Challenge Workshop at CVPR 2019

Learning Based Single Image Blur Detection and Segmentation
Kuldeep Purohit, ***Anshul Shah****, A N Rajagopalan*
International Conference on Image Processing (ICIP) 2018

Hybrid virtual and physical jewelry shopping experience
Mohit Jain, Pratyush Kumar, Megha Nawhal, Ashok Pon Kumar, ***Anshul Shah****, Gyanendra Sharma, Amith Singhee*
Patent Filed

Professional Experience

Mitsubishi Electric Research Labs (MERL), MA **Jun'20-Aug'20**
Mentor : Dr. Anoop Cherian *Video Representation Learning*
Worked on a novel way of contrastive learning for improving video representations

IBM Research Lab, India **May'16-Jul'16**
Mentors : Prof. Pratyush Kumar, Ashok Ponkumar, Dr. Amith Singhee *Virtual Cognitive Mirror*
Developed algorithms using machine learning and image processing techniques to detect feature points in a face image and overlay images to improvise jewelry buying experience.

Matrix ComSec R&D, India **May'15-Jul'15**
Surveillance Camera Video Enhancement
Studied various techniques and implemented algorithms on the TI DM38x media processor for security camera video enhancement

Academic Achievements

- **Branch Rank 2** : Ranked 2nd in Dual Degree (B.Tech+M.Tech) in Electrical Engineering at IIT Madras (Batch of 2018)
- **Department Topper 2015-16** : Awarded the Kolluri Memorial Prize for **best Academic record** in Electrical Engineering at IIT Madras in 3rd Year with a GPA of 9.75

- **IIT - Joint Entrance Examination Advanced 2013** : Ranked 1074 among more than 150,000 candidates
- **Inspire Scholarship 2013** : Conferred by Dept. of Science & Technology, Government of India to top 1% candidates based on Class XII exam
- **National Cyber Olympiad** : Secured national rank 12 (Class 12) in National Cyber Olympiad 2013 and ranked 1st in state

Other Selected Projects

Generating universal triggers for NLP systems — **Aug'19 - Dec'19**
Mentor : Prof. Hal Daume III — *University of Maryland*

Interpreting neural networks using Canonical Correlation Analysis — **Feb'19 - Aug'19**
Mentor : Prof. Furong Huang — *University of Maryland*

Single Image to 3D — **Aug'18-Jan'19**
Mentor : Prof. Abhinav Shrivastava — *University of Maryland*

3D Reconstruction System — **Oct'16-Jan'17**
Guide : Prof. Radim Šára — *Czech Technical University in Prague*

Robot Navigation using Kinect — **May'14-Jun'14**
Centre for Innovation — *IIT Madras*

Kinect Meets DJ — **Aug'14-Jan'15**
Centre for Innovation — *IIT Madras*

Teaching and Mentoring experience

Teaching Assistant — **Jan'18-May'18**
Image Signal Processing — *IIT Madras*

Teaching Assistant — **Jun'17-Nov'17**
Physics I — *IIT Madras*

Project Mentor — **Aug'15-Jan'16**
Centre for Innovation — *IIT Madras*

Voluntary Service

Reviewed for AAAI'21, NeurIPS'20, ECCV'20, AAAI'20

Relevant Coursework

Computer Vision and Machine Learning: Algorithms in Machine Learning : Guarantees and Analyses[1], Image Understanding[1], Advanced Techniques in Visual Learning and Recognition[1], Image Signal Processing[2], Deep Learning[2], 3D Computer Vision[3], Machine Learning for Computer Vision[2], Computational Lingusitics[1]
Mathematics: Advanced Numerical Optimization[1], Convex Optimization[2], Probability, Statistics and Stochastic Processes[2], Linear Algebra and Numerical Analysis[2], Functions of several variables[2], Mathematical Finance[2]

Relevant Skills

Programming Languages: Python, MATLAB, C++, C
Libraries & Tools: PyTorch, TensorFlow

[1]University of Maryland, College Park
[2]Indian Institute of Technology Madras
[3]Czech Technical University in Prague, Czech Republic