Aniket Roy

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https://scholar.google.co.in/citations?user=9y2gsDwAAAAJhl=en

CURRENT RESEARCH INTEREST

Computer Vision, Deep learning, Few-shot learning, Multi-modal learning, Diffusion model.

EDUCATION

Johns Hopkins University USA
Ph.D. in Computer Science (GPA: 4.0/4.0, Advisor: Prof. Rama Chellappa) *Aug. 2019 – current*

Indian Institute of Technology Kharagpur India
M.S. (by Research) in Computer Science and Engineering (GPA: 9.33/10) *2015 – 2018*

West Bengal University of Technology India
B.Tech in Electronics and Communication Engineering (GPA: 8.64/10) *2010 – 2014*

EXPERIENCE

Summer Research Internship June. 2021 – Aug. 2021
Mitsubishi Electric Research Laboratories, Mentor: Dr. Anoop Cherian

Summer Research Internship June. 2022 – Aug. 2022
Amazon AWS AI, Mentor: Dr. Avinash Ravichandran, Dr. Hao Yang

Summer Research Internship June. 2023 – Aug. 2023
SRI International, Mentor: Dr. Susmit Jha

PUBLICATIONS

- *Aniket Roy*, Anshul Shah, Ketul Shah, Prithviraj Dhar, Anoop Cherian, Rama Chellappa **"FeLMi: Few-shot learning with hard Mixup"** NeurIPS 2022.

- *Aniket Roy*, Anshul Shah, Ketul Shah, Anirban Roy, Rama Chellappa **"Cap2Aug: Caption guided Image-to-Image data Augmentation"** submitted to AAAI 2024.

- *Aniket Roy*, Maitreya Suin, Anshul Shah, Ketul Shah, Jiang Liu, Rama Chellappa **"DiffNat: Improving diffusion image quality using natual image statistics"** submitted to ICLR 2024.

- *Aniket Roy*, Anshul Shah, Ketul Shah, Anirban Roy, Rama Chellappa **"DiffAlign: Few-shot Learning using diffusion based synthesis and alignment"** arxiv

- Aniket *Roy*[*], Shraman *Pramanick*[*], Vishal Patel, **"Multimodal Learning using Optimal Transport for Sarcasm and Humor Detection"**, WACV 2022

- Anshul Shah, *Aniket Roy*, Ketul Shah, Shlok Mishra, David Jacobs, Anoop Cherian, Rama Chellappa **"HaLP: Hallucinating Latent Positives for Skeleton-based Self-Supervised Learning of Actions"** CVPR 2023.

- Ketul Shah, Anshul Shah, Arun Reddy, *Aniket Roy*, Arushi Sinha, Celso De Melo, Rama Chellappa **"Ground-to-Air Generalization for Action Recognition via Synthesis"** submitted to WACV 2024

- *Aniket Roy*, Anirban Roy, Soma Mitra and Kuntal Ghosh **"BRI3L: A brightness illusion image dataset for identification and localization of regions of illusory perception"**. (Submitted to NeurIPS 2023 dataset and benchmark track)

- Prithviraj Dhar, Josh Gleason, *Aniket Roy*, Carlos Castillo, Rama Chellappa (2021) **"PASS: Protected Attribute Suppression System for Mitigating Bias in Face Recognition"** ICCV 2021

- Prithviraj Dhar, Josh Gleason, *Aniket Roy*, Carlos Castillo, P.J. Philips, Rama Chellappa (2021) **"Distill and De-bias: Mitigating Bias in Face Recognition using Knowledge Distillation"** arxiv

- [**Book**] *Aniket Roy*, Rahul Dixit, Ruchira Naskar and Rajat Subhra Chakraborty, **"Digital Image Forensics - Theory and Implementation"**, Springer, ISBN: 978-9811076435.

- *Aniket Roy*, Rajat Subhra Chakraborty **"Towards Optimal Prediction Error Expansion based Reversible Image Watermarking"**. *IEEE Transactions on Circuits and Systems for Video Technology (IEEE TCSVT))* DOI:10.1109/TCSVT.2019.2911042.

- Diangrati Tariang, Prithviraj Sengupta, *Aniket Roy*, Rajat Subhra Chakraborty and Ruchira Naskar **"Classification of Computer Generated and Natural Images based on Efficient Deep Convolutional Recurrent Attention Model"**. *IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW) 2019.* pp. 146-152.

- *Aniket Roy*, Diangrati Tariang, Rajat Subhra Chakraborty and Ruchira Naskar **"Discrete Cosine Transform Residual Feature Based Filtering Forgery and Splicing Detection in JPEG Images"**. *IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW) 2018.* pp. 1552-1560.

- *Aniket Roy*, Rajat Subhra Chakraborty, Udaya Sameer, Ruchira Naskar. **"Camera Source Identification Using Discrete Cosine Transform Residue Features and Ensemble Classifier"**. *IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW) 2017.* pp. 1848-1854.

- *Aniket Roy*, Akhil Konda and Rajat Subhra Chakraborty. **"Copy Move Forgery Detection with Similar But Genuine Objects"**. *IEEE International Conference on Image Processing (ICIP) 2017.* pp. 4083-4087.

- Diangarti Tariang, *Aniket Roy*, Rajat Subhra Chakraborty and Ruchira Naskar. **"Automated JPEG Forgery Detection with Correlation based Localization"**. *IEEE International Conference on Multimedia and Expo (ICMEW) Workshops 2017.* pp. 226-231.

- [**Best Paper Award**] *Aniket Roy* and Rajat Subhra Chakraborty **"Optimal Distortion Estimation For Prediction Error Expansion Based Reversible Watermarking",** International Workshop on Digital-Forensics and Watermarking (IWDW), 2016. Springer.

- *Aniket Roy*, Arpan Kumar Maiti and Kuntal Ghosh **"An HVS Inspired Robust Non-blind Watermarking Scheme in YCbCr Space Additionally Designed to Prevent Singular Value Exchange Attack"**. Vol. 18, No. 3, International Journal of Image and Graphics (IJIG)

Awards and Honors

- Recipient of **Markose Thomas Memorial Award** for best research paper in CSE 2021 from IIT Kharagpur.
- Recipient of **Best Paper Award** in International Workshop on Digital-forensics and Watermarking (IWDW).
- Awarded with **"SCHEME OF SCHOLARSHIP FOR COLLEGE AND UNIVERSITY STUDENTS"** for *Higher Secondary Examination* and extended throughout B.Tech degree course.

Technical Skills

Languages: Python, C, Matlab, Java.
Frameworks: PyTorch, Tensorflow, Keras.

Professional services

Reviewer: CVPR, ECCV, ICLR, NeurIPS, IEEE TIFS, ACM TOMM.

Relevant courseworks

Advanced Image Processing and Computer Vision, Design and Analysis of Algorithms, Parallel and Distributed Algorithms, Statistical Pattern Recognition, Probabilistic Models in Visual Cortex, Deep Learning, Convex Optimization, Advanced Numerical Optimization.