Akash Gupta

Google Scholar, http://www.akashagupta.com

RESEARCH INTERESTS

- Computer Vision, Deep Learning, Domain Adaptation, Transfer Learning, Adversarial Learning
- Video Generation and Enhancement; Object Detection; Action Recognition and Anticipation

EDUCATION

University of California, Riverside, California, USA

- Ph.D. in Electrical Engineering — Apr 2018 – Sep 2021
  - Advisor: Prof. Amit Roy-Chowdhury
  - Thesis: Video Enhancement using Internal Learning and Blind Priors
  - GPA: 3.8 / 4.0
- M.S. in Electrical Engineering — Sep 2016 – Mar 2018
  - Advisor: Prof. Amit Roy-Chowdhury and Prof. Conrad Rudolph
  - Thesis: Deep Learning Approaches for Identity Verification in Renaissance Portraits
  - Cumulative GPA: 3.8 / 4.0

Visvesvaraya National Institute Of Technology, Nagpur, Maharashtra, India

- B.Tech. in Electronics and Communications — Sep 2010 – May 2014
  - Advisor: Prof. Ashwin Kothari
  - Thesis: Buccinatory Sensing Driven Artificial Companion
  - Cumulative GPA: 8.4 / 10.0

RESEARCH EXPERIENCE

Vimaan AI, Santa Clara — California, USA

- Senior Machine Learning Scientist — Jan 2023 – Present
  - Team: Core ML
  - Manager: Dr. Sudhir Kumar Singh
- Machine Learning Scientist — Dec 2021 – Jan 2023
  - Team: Advanced Technology and Product
  - Manager: Dr. Sudhir Kumar Singh

JD.com AI Research, Mountain View — CA, USA

- Research Intern — Jun 2020 – Dec 2020
  - Group: Computer Vision Group
  - Mentor: Dr. Jingen Liu
  - Project: Action Anticipation

MayaChitra Inc., Santa Barbara — CA, USA

- Research Intern — Apr 2018 – Sep 2018
  - Mentors: Prof. B.S. Manjunath, Prof. Shiv Chandrasekaran and Dr. Lakshmanan Natrajan
  - Project: Classification and Detection of Malware using Computer Vision
  - Focus: Malware Analysis, Deep Learning, Image Processing

University of California, Riverside — CA, USA

- Graduate Student Researcher — Apr 2017 – Sep 2021
  - Group: Video Computing Group
  - Advisor: Prof. Amit Roy-Chowdhury
  - Focus: Computer Vision and Machine Learning

Research Center Imarat (DRDO), Hyderabad — Telangana, India

- Summer Research Intern — May 2013 – Jul 2013
  - Mentor: B. Someswara Rao, Scientist F
  - Project: Enhancing Frequency Resolution using FFT in Radar Seeker
  - Focus: Signal Processing and Communication

WORK EXPERIENCE

Standard & Poor's Global Market Research, Gurgaon — Harayana, India

- Quality Analyst — Jun 2014 – Jul 2016
  - Projects: Real-Time Desktop Application and Market Data Reporting System
  - Manager: Kristina Younker

SELECTED PUBLICATIONS

[1] Akash Gupta, Sudhir Kumar Singh and Amit K. Roy-Chowdhury "Joint Video Rolling Shutter Correction and Super-Resolution", *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2023. **Acceptance rate:** $\approx 48.9\%$

[2] Abhishek Aich, Calvin Khang-Ta, Akash Gupta, Chengyu Song, Srikanth V. Krishnamurthy, M. Salman Asif and Amit K. Roy-Chowdhury, "GAMA: Generative Adversarial Multi-Object Scene Attacks", *Neural Information Processing Systems (NeurIPS)*, 2022. **Acceptance rate:** $\approx 25.6\%$

[3] Calvin-Khang Ta*, Abhishek Aich*, Akash Gupta*, and Amit K. Roy-Chowdhury, "Poisson2Sparse: Self-Supervised Poisson Denoising From a Single Image", *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, 2022. (*joint first authors) **Acceptance rate:** $\approx 30\%$

[4] Akash Gupta, Padmaja Jonnalagedda, Bir Bhanu, and Amit K. Roy-Chowdhury, "Ada-VSR: Adaptive Video Super-Resolution with Meta-Learning", *ACM International Conference on Multimedia (ACM MM)*, 2021. **(Oral)** **Oral Acceptance rate:** $\approx 9\%$

[5] Akash Gupta, Abhishek Aich, and Amit K. Roy-Chowdhury, "ALANET: Adaptive Latent Attention Network for Joint Video Deblurring and Interpolation", *ACM International Conference on Multimedia (ACM MM)*, 2020. **(Oral)** **Oral Acceptance rate:** $\approx 9\%$

[6] Akash Gupta*, Rameswar Panda*, Sujoy Paul, Jianming Zhang and Amit K. Roy-Chowdhury, "Adversarial Knowledge Transfer from Unlabeled Data", *ACM International Conference on Multimedia (ACM MM)*, 2020. (* joint authors) **Acceptance rate:** $\approx 27.9\%$

[7] Abhishek Aich*, Akash Gupta*, Rameswar Panda, Rakib Hyder, M. Salman Asif, and Amit K. Roy-Chowdhury, "Non-Adversarial Video Synthesis with Learned Priors", *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020. (* joint authors) **Acceptance rate:** $\approx 22\%$

[8] Akash Gupta, Abhishek Aich, Kevin Rodriguez, G. Venugopala Reddy, and Amit K. Roy-Chowdhury, "Deep Quantized Representation for Enhanced Reconstruction", *IEEE International Symposium on Biomedical Imaging (ISBI)*, 2020. **Acceptance rate:** $\approx 50\%$

[9] Akash Gupta, N. C. Mithun, Conrad Rudolph, and Amit Roy-Chowdhury, "Deep Learning based Identity Verification in Renaissance Portraits", *IEEE International Conference on Multimedia and Expo (ICME) 2018* **Acceptance rate:** $\approx 30\%$

PRE-PRINTS

[1] Akash Gupta, Amit K. Roy-Chowdhury, Jingen Liu, Liefeng Bo and Tao Mei "A-ACT: Action Anticipation through Cycle Transformations" , 2021.

AWARDS & SCHOLARSHIPS

- **Deans Distinguished Fellowship Award (Bridge Funding)**, UC, Riverside 2018 – 2019

NEWS

- CVPR2020: Non-Adversarial Video Synthesis with Learned Priors [News Article Link]

TECHNICAL SKILLS

- **Programming Skills:** Python (proficient) , MATLAB (proficient), C++ (novice)
- **Computing Libraries:** NumPy, OpenCV, SQLite, Pillow, Scikit-Learn, Flask
- **Deep Learning Frameworks:** PyTorch, Caffe, TensorFlow (Keras)
- **Databases:** MySQL, Microsoft SQL

PROFESSIONAL ACTIVITIES

Conference Reviewer:
IEEE ICIP 2018-2022, IEEE ICPR 2020-2022, IEEE ECCV2020–MVA, IEEE CVPR 2021-2022, IEEE ICCV 2021-2022, IEEE CVPR 2021-2022 Workshops–TCV, IEEE CVPR 2021 Workshops–HVU
Journal Reviewer:
IEEE TPAMI, IEEE TIP, IEEE TCSVT, IEEE TNNLS
Program Committee Member:
IEEE ECCV2020–MVA