Kuldeep S. Kulkarni

kulkarni.s.kuldeep@gmail.com
kuldeepkulkarni.github.io
+91-7676756467

Summary

I have been fascinated by pixels for the past decade or so and have worked on various problems in computer vision. For the past six years at Adobe, I have been working on generative models including GANs and diffusion models with a track record of publishing in top-conferences as well as shipping into product that garnered media coverage. At Adobe Research India, I was the first computer vision researcher in the team and since then I have been a major contributor in the development of the team by attracting top talent in computer vision into the team.

Employment

Research Scientist at **Adobe Research, Bengaluru** (Mar 2019- present)

Post-doctoral Researcher at **Carnegie Mellon University, Pittsburgh** (August 2017- Feb 2019) Advisor: Aswin Sankaranarayanan

Education

- **PhD** in Electrical Engineering with Arts, Media and Engg. (AME) concentration (Fall 2012 - Summer 2017)
  Arizona State University, Tempe

Product Impact:

- Our image animation technology, "Moving Elements", that is inspired by our CVPR 2022 paper is shipped to and is available in Adobe Photoshop Elements 2023. Media coverage: Forbes, TechCrunch.

Publications, Book Chapters and Patents

- Harsh Rangwani, Aishwarya Agarwal, **Kuldeep Kulkarni**, R Venkatesh Babu, Srikrishna Karanam, Composing Parts for Expressive Object Generation, CVPR 2025
- Utkarsh Nath, Rajhans Singh, Ankita Shukla, **Kuldeep Kulkarni**, Pavan Turaga, Polynomial implicit neural framework for promoting shape awareness in generative models, IJCV 2025
- Swasti Shreya Mishra, **Kuldeep Kulkarni**, Duygu Ceylan, Balaji Vasan Srinivasan, FLOAT: Flow Warping of Self-attention for Clothing Animation Generation
- Divya Kothandaraman, **Kuldeep Kulkarni**, Sumit Shekhar, Balaji Vasan Srinivasan, Dinesh Manocha, ImPoster: Text and Frequency Guidance for Subject Driven Action Personalization using Diffusion Models, COLING 2025
- Nihal Jain, Praneetha Vaddamanu, Paridhi Maheshwari, Vishwa Vinay, **Kuldeep Kulkarni**, Self-supervised multi-view disentanglement for expansion of visual collections, WSDM 2023
- Tripti Shukla, Paridhi Maheshwari, Rajhans Singh, Ankita Shukla, **Kuldeep Kulkarni**, Pavan Turaga, Scene graph driven text-prompt generation for image inpainting, CVPR 2023 workshop
- Hugo Bertiche, Niloy J Mitra, **Kuldeep Kulkarni**, Chun-Hao P Huang, Tuanfeng Y Wang, Meysam Madadi, Sergio Escalera, Duygu Ceylan, Blowing in the wind: Cyclenet for human cinemagraphs from still images, CVPR 2023
- Rishi Agarwal, Tirupati Saketh Chandra, Vaidehi Patil, Aniruddha Mahapatra, **Kuldeep Kulkarni**, Vishwa Vinay, GEMS: Scene expansion using generative models of graphs, WACV 2023
- Rushil Gupta, Suryateja BV, Nikhil Kapoor, Rajat Jaiswal, Sharmila Nangi, **Kuldeep Kulkarni**, User-Guided Variable Rate Learned Image Compression, CVPR 2022 Workshop
- Aniruddha Mahapatra, **Kuldeep Kulkarni**, Controllable animation of fluid elements in still images, CVPR 2022

- Bholeshwar Khurana, Soumya Ranjan Dash, Abhishek Bhatia, Aniruddha Mahapatra, Hrituraj Singh, **Kuldeep Kulkarni** 'SemIE: Semantically-aware Image Extrapolation' at ICCV 2021
- **Kuldeep Kulkarni**, Tejas Gokhale, Rajhans Singh, Pavan Turaga, Aswin Sankaranarayanan, 'Halluci-Net: Exploiting Object Co-occurrence for Scene Completion', CVPR 2021 Workshop
- Michael Jones, Tim Marks, **Kuldeep Kulkarni**, Method and System for Detecting Actions in Videos using Contour Sequences, US Patent 15/670,021, 2019
- Suhas Lohit, Rajhans Singh, **Kuldeep Kulkarni**, Pavan Turaga, Rank-Regularized Measurement Operators for Compressive Imaging, Asilomar Conference, 2019
- **Kuldeep Kulkarni**, Pavan Turaga, Anuj Srivastava, Rama Chellappa, Pattern Recognition, **Wiley Encyclopedia on Electrical and Electronics Engineering**.
- **Kuldeep Kulkarni**, Suhas Lohit, Pavan Turaga, Ronan Kerviche, Amit Ashok, 'ReconNet: Non-Iterative Reconstruction of Images from Compressively Sensed Measurements', CVPR 2016 [**citations:** ~ 1000].
- Suhas Lohit, **Kuldeep Kulkarni**, Ronan Kerviche, Pavan Turaga, Amit Ashok, 'Convolutional Neural Networks for Non-iterative Reconstruction of Compressively Sensed Images', IEEE Transactions on Computational Imaging 2018
- **Kuldeep Kulkarni**, Pavan Turaga, 'Reconstruction-Free Action Inference from compressive imagers', IEEE Transactions on Pattern Analysis and Machine Intelligence, 2016
- **Kuldeep Kulkarni**, Pavan Turaga, 'Fast integral image estimation at 1% measurement rate'
- Sohil Shah, **Kuldeep Kulkarni**, Arijit Biswas, Ankit Gandhi, Om Deshmukh, Larry Davis, 'Weakly Supervised Learning of Heterogeneous Concepts in Videos', ECCV 2016
- Suhas Lohit, **Kuldeep Kulkarni**, Pavan Turaga, Jian Wang, Aswin Sankaranarayanan 'Reconstruction-free Inference on Compressive Measurements', 4th IEEE Workshop on Computational Cameras and Displays (CCD), held in conjunction with IEEE CVPR, 2015. **(Best Paper Award)**
- Mayank Gupta*, Arjun Jauhari*, **Kuldeep Kulkarni**, Suren Jayasuriya, Alyosha Molnar, Pavan Turaga, 'Compressive Light Field Reconstruction using Deep Learning', at CVPR 2017 CCD workshop
- Suhas Lohit, **Kuldeep Kulkarni**, Pavan Turaga, 'Direct Inference on Compressive Measurements using Convolutional Neural Networks', ICIP 2016
- **Kuldeep Kulkarni**, Pavan Turaga, 'Recurrence Textures for Activity Recognition from compressive cameras', ICIP 2012
- Ankit Gandhi, Arijit Biswas, Om Deshmukh, Sohil Shah, **Kuldeep Kulkarni**, Method and System for Multimedia Processing to Identify Concepts in Multimedia, patent application submitted to USPTO.
- Li-Chi Huang, **Kuldeep Kulkarni**, Pavan Turaga, Anik Jha, Suhas Lohit, Suren Jayasuriya, Pavan Turaga, CS-VQA: Visual Question Answering with Compressively Sensed Images, ICIP 2018.

Patents

Please check my Google scholar profile for the full list of patents.

Mentoring Experience

I have mentored the following undergrad, masters and PhD students as well as research associates/predocs. Please find full list and their current coordinates on my website.