**Education**

**University of Maryland, College Park**

*Ph.D in Computer Science*  
Advisor: Prof. Abhinav Shrivastava  
Aug. 2019 – Present  
4.0/4.0

**Indraprastha Institute of Information Technology, Delhi, India**  
*B.Tech. in Computer Science and Engineering*  
Aug. 2015 – May 2019  
9.89/10.0

**Research Interests**

I am interested in solving problems using less supervision and uncurated as well as synthetic data. Recently I have been working on improving recognition using generation especially using diffusion models as synthetic data sources. I have previously explored tasks across recognition and generation focusing on different supervision strategies and propose modified architectures and losses to utilize the data better under different settings.

**Publications**

**Gen2Det: Generate to Detect**  
*S. Suri*, F. Xiao, A. Sinha, S. Culatana, R. Krishnamoorthi, C. Zhu, A. Shrivastava  
Under Review

**LiFT: A Surprisingly Simple Lightweight Feature Transform for Dense ViT Descriptors**  
*S. Suri*, M. Walmer*, K. Gupta, A. Shrivastava  
Under Review (* Equal Contribution)

**GRIT: GAN Residuals for Image-to-Image Translation**  
*S. Suri*, M. Meshry*, L. Davis, A. Shrivastava  
Winter Conference on Applications of Computer Vision (WACV) 2024 (* Equal Contribution)

**Diff2Lip: Audio Conditioned Diffusion Models for Lip-Synchronization**  
S. Mukhopadhyay, *S. Suri*, R. Gadde, A. Shrivastava  
Winter Conference on Applications of Computer Vision (WACV) 2024

**SparseDet: Improving Sparsely Annotated Object Detection with Pseudo-positive Mining**  
*S. Suri*, S. Rambhatla*, R. Chellappa, A. Shrivastava  
International Conference on Computer Vision (ICCV) 2023 (* Equal Contribution)

**Teaching Matters: Investigating the Role of Supervision in Vision Transformers**  
M. Walmer*, *S. Suri*, K. Gupta, A. Shrivastava  
Conference on Computer Vision and Pattern Recognition (CVPR) 2023 (* Equal Contribution)

**Towards Discovery and Attribution of Open-world GAN Generated Images**  
S. Girish*, *S. Suri*, S. Rambhatla, A. Shrivastava  
International Conference on Computer Vision (ICCV) 2021 (* Equal Contribution)

**Learned Spatial Representations for Few-shot Talking-Head Synthesis**  
M. Meshry, *S. Suri*, L. Davis, A. Shrivastava  
International Conference on Computer Vision (ICCV) 2021

**Improving Face Recognition Performance using TeCS$^2$ Dictionary**  
*S. Suri*, A. Sankaran, M. Vatsa, R. Singh  
Pattern Recognition Letters (PRL) 2020

**On matching faces with alterations due to plastic surgery and disguise**  
*S. Suri*, A. Sankaran, M. Vatsa, R. Singh  
IEEE International Conference on Biometrics Theory, Applications and Systems (BTAS) 2018

**An Interpretable Generative Model for Handwritten Digits Synthesis**  
Y. Zhu, *S. Suri*, P. Kulkarni, Y. Chen, J. Duan, C.-C. Jay Kuo  
International Conference on Image Processing (ICIP) 2019

**Angel or Demon? Characterizing Variations Across Twitter Timeline of Technical Support Campaigners**  
S. Gupta, G. S. Bhatia, *S. Suri*, D. Kuchhal, P. Gupta, M. Ahamad, M. Gupta, P. Kumaraguru  
The Journal of Web Science Vol. 6 (2019)
Professional Experience

Research Scientist Intern, Meta AI May’23 – Dec’23
Mentor : Chenchen Zhu
Utilizing Synthetic Data from Diffusion Models for Object Detection and Segmentation
Proposed a novel pipeline to utilize synthetic data generated using grounded diffusion models and training object detection and segmentation models with it.

Applied Science Intern, AWS Textract May’21 – Aug’21
Mentors : Vijay Mahadevan and Ankan Bansal
Layout Aware Semi-Supervised Pre-Training for Document Understanding
Proposed a semi-supervised approach for multimodal pre-training of transformers using document layout information. Showed improvement in multiple few-shot downstream tasks.

IBM Research, Bengaluru, India May’19 – Jul’19
Mentors : Srikanth Tamilselvam and Senthil Mani
Image Synthesis
Worked on incorporating common sense from a knowledge base for fashion based image synthesis using GANs.

University of Southern California, Los Angeles May’18 – Jul’18
Mentor : Prof. C. -C. Jay Kuo
Interpretable Image Synthesis
Worked on non Deep Learning based interpretable generative model for handwritten digit image synthesis.

IIIT Delhi, India May’17 – Aug’17
Mentors: Mayank Vatsa and Richa Singh
Face Recognition
Developed an easy to use standalone system for face recognition to be deployed and used in practical settings.

Achievements

- Dean’s Fellowship 2019: Awarded at the start of Ph.D at UMD.
- AICTE-INAE Travel grant: Awarded the grant to present my paper at BTAS 2018 in California, USA.
- IUSSTF-Viterbi Scholarship 2018: Funded by the Indo-US Science and Technology Forum to undertake a research internship at the Viterbi School of Engineering, University of Southern California.
- IIIT-Delhi Dean’s Award for Research and Innovation 2018: Awarded for my research on face recognition.
- Dean’s List Award 2016,’17,’18: For excellent academic performance.
- IIT-JEE Mains: Secured an All India Rank of 2106 out of 1.5 million candidates.

Other Selected Projects

- Latent Space Data Augmentations for Better Generalization Aug’20 – Dec’20
  Mentor : Prof. Soheil Feizi
  University of Maryland

- An Investigation of the Role of Learning Rate in Deep Learning Aug’20 – Dec’20
  Mentor : Prof. Furong Huang
  University of Maryland

- Detecting Obscene and Retouched Images Jan’19 – May’19
  Mentor : Prof. Mayank Vatsa
  IIIT Delhi

- Human Parsing using Cascaded Segmentation Jan’19 – May’19
  Mentor : Prof. Rajiv Ratn Shah
  IIIT Delhi

- Model Agnostic Adversarial Learning Aug’18 – Dec’18
  Mentor : Prof. Richa Singh
  IIIT Delhi

- Adversarial Learning on Medical Image Data Jan’18 – May’18
  Mentor : Prof. Richa Singh
  IIIT Delhi

- Deep Reinforcement Learning on Atari Aug’17 – Dec’17
  Mentor : Prof. Mayank Vatsa
  IIIT Delhi

- Wake Component Detection for Heading and Velocity Estimation of Ships using SAR Images Aug’17 – Dec’17
  Mentor : Prof. A. V. Subramanyam
  IIIT Delhi

Teaching experience

- Teaching Assistant Jan’24 – May’24
  Introduction to Deep Learning
  University of Maryland

- Teaching Assistant Aug’23 – Dec’23
  Advanced Techniques in Visual Learning & Recognition
  University of Maryland

- Teaching Assistant Jan’19 – May’19
  Statistical Machine Learning
  IIIT Delhi

- Teaching Assistant Aug’17 – Dec’17
  Systems Management
  IIIT Delhi
Voluntary Service

Reviewed for IJCV’24, ICCV’23, CVPR’23, IJCV’23, WACV’22, ECCV’22, CVPR’22, ICCV’21, CVPR’21, CVPR’20, BMVC’20, TBIOM’19

Relevant Coursework

Computer Vision and Machine Learning: Algorithms in Machine Learning: Guarantees and Analyses¹, Deep Learning¹, Advanced Techniques in Visual Learning and Recognition¹, Statistical Pattern Recognition¹, Digital Image Processing², Artificial Intelligence², Statistical Machine Learning², Advanced Machine Learning², Computer Vision², Multimedia Computing and Applications²
Mathematics: Advanced Numerical Optimization¹, Linear Algebra², Probability and Statistics², Discrete Mathematics², Multivariate Calculus², Theory of Computation², Linear Optimization²

Relevant Skills

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

¹University of Maryland, College Park
²IIIT-Delhi