

# Maitreya Suin

## Education

- 2022–Present **Postdoctoral Researcher**, Computer Vision, *Johns Hopkins University*, Madras, Research Advisor: Prof. Rama Chellappa.
- 2017–2022 **MS + PhD**, Image Processing and Computer Vision, *Indian Institute of Technology*, Madras, Research Advisor: Prof. A.N.Rajagopalan.  
CGPA - 8.59
- 2012–2016 : **Bachelor of Technology**, *Electronics and Communication Engineering*, Institute of Engineering and Management, Kolkata.  
CGPA - 9.04

## Research Areas

- Face Restoration, Diffusion Model, Face Recognition, Adaptive Neural Network Design, Image and Video Enhancement, Image Inpainting, Deep/Deep-Reinforcement Learning.

## Publications

- WACV-2024** **Maitreya Suin**, Nithin Gopalakrishnan Nair, Chun Pong Lau, Vishal M. Patel and Rama Chellappa, *Diffuse and Restore: A Region-Adaptive Diffusion Model for Identity-Preserving Blind Face Restoration*, Winter Conference on Applications of Computer Vision (WACV), 2024.
- IJCB-2023** Chun Pong Lau, **Maitreya Suin**, and Rama Chellappa, *ATDetect: Face Detection and Keypoint Extraction at Range and Altitude*, IEEE International Joint Conference on Biometrics, 2023.
- TCSVT** Praveen Kandula, **Maitreya Suin** and A.N. Rajagopalan, *Illumination-adaptive unpaired low-light enhancement*, IEEE Transactions on Circuits and Systems for Video Technology.
- ECCVW-2022** Snehal S. Tomar, **Maitreya Suin** and A.N. Rajagopalan, *Hybrid Transformer based Feature Fusion for Self-Supervised Monocular Depth Estimation*, European Conference on Computer Vision Workshop (AIM), 2022.
- ICCV-2021** **Maitreya Suin**, Kuldeep Purohit and A.N. Rajagopalan, *Distillation Guided Image Inpainting*, International Conference on Computer Vision, 2021.
- ICCV-2021** Kuldeep Purohit, **Maitreya Suin**, A.N. Rajagopalan and Vishnu Naresh Boddeti, *Spatially-Adaptive Image Restoration using Distortion-Guided Networks*, International Conference on Computer Vision, 2021.
- CVPR-2021** **Maitreya Suin** and A.N. Rajagopalan, *Gated Spatio-Temporal Attention-Guided Video Deblurring*, Conference on Computer Vision and Pattern Recognition, 2021.
- CVPR-2020** **Maitreya Suin**, Kuldeep Purohit and A.N. Rajagopalan, *Spatially-Attentive Patch-Hierarchical Network for Adaptive Motion Deblurring*, Conference on Computer Vision and Pattern Recognition, 2020.
- AAAI-2020** **Maitreya Suin** and A.N. Rajagopalan, *An Efficient Framework for Dense Video Captioning*, (Oral) Thirty-Fourth AAAI Conference on Artificial Intelligence, 2020.
- JSTSP** **Maitreya Suin**, Kuldeep Purohit and A.N. Rajagopalan, *Degradation Aware Approach to Image Restoration Using Knowledge Distillation*, IEEE Journal of Selected Topics in Signal Processing. Impact Factor: 6.856

**ICCVW-** Kuldeep Purohit, **Maitreya Suin**, Praveen Kandula and A.N. Rajagopalan, *Depth-guided Dense*  
2019 *Dynamic Filtering Network for Bokeh Effect Rendering*, International Conference on Computer  
Vision Workshop, 2019.

[Under Review](#)

2023 **Maitreya Suin** and Rama Chellappa, *CLR-Face: Conditional Latent Refinement for Blind Face  
Restoration Using Score-Based Diffusion Models*, Under review at AAAI Conference on Artificial  
Intelligence (**AAAI**).

2023 Aniket Roy, **Maitreya Suin**, Anshul Shah, Prithviraj Dhar, Ketul Shah, Rama Chellappa, *Diff-  
Nat: Fine-tuning text-to-image diffusion model with natural image statistics*, Under review at  
International Conference on Learning Representations (**ICLR**).

2023 **Maitreya Suin**, Kuldeep Purohit and A.N. Rajagopalan, *Spatially-Attentive Patch-Hierarchical  
Network with Adaptive Sampling for Motion Deblurring*, Under review at IEEE Transactions on  
Pattern Analysis and Machine Intelligence (**TPAMI**).

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## Co-Authored Workshop Proceedings

**CVPRW** NTIRE 2021 Challenge on Depth Guided Image Relighting: Report.

**CVPRW** NTIRE 2021 Challenge on Image Deblurring: Report.

**ECCVW** AIM 2020 challenge on rendering realistic bokeh.

**ECCVW** AIM 2020 challenge on image extreme inpainting.

**ECCVW** AIM 2020 challenge on efficient super-resolution: Methods and results.

**ECCVW** AIM 2020: Scene relighting and illumination estimation challenge.

**CVPRW** NTIRE 2020 challenge on image and video deblurring: Report.

**ICCVW** AIM 2019 Challenge on Real-world Super-resolution: Methods and Results.

**ICCVW** AIM 2019 Challenge on Image Extreme Super-Resolution: Methods and Results.

**ICCVW** AIM 2019 Challenge on Image Demoireing: Methods and Results.

**ICCVW** AIM 2019 Challenge on Bokeh Effect Synthesis: Methods and Results.

**CVPRW** NTIRE 2019 Challenge on Image Colorization: Report.

**CVPRW** NTIRE 2019 Image Dehazing Challenge Report.

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## Awards and Achievements

- Our research work has been featured on *Ministry of Education, India* and *News Websites* .
- Our team from IPCV Lab, IITM developed Mixed-reality segment for the *2020 Virtual Convocation of IIT Madras*..
- Winner of the Image Colorization Challenge in **NTIRE**: New Trends in Image Restoration and Enhancement, **CVPR** 2019.
- 1<sup>st</sup> Runner up of the Bokeh Effect and Image SR Challenges, AIM workshop (**ICCV**) 2019.
- 2<sup>nd</sup> Runner up of the Image Relighting challenge (Track 3) of AIM Workshop (**ECCV**) 2020.
- Received **travel grant from Google Research** to attend the Thirty-fourth AAAI Conference on Artificial Intelligence (**AAAI**), 2020, New York, USA.

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## Experiences

- Invited talk at Indian Institute of Technology, Madras.
- Served as a reviewer in CVPR, TPAMI, IJCV, AAAI, TIP, TMI.
- Attended ICCV-'23, CVPR-'23, ICCV-'21, CVPR-'21, CVPR-'20, AAAI-'20 conferences.
- Attended workshop on Computational Brain Research by CCB, IIT Madras (2019).

- Served as teaching assistant for Deep Learning, Image Signal Processing, Modern Computer Vision courses under Prof. A.N. Rajagopalan and Prof. Kaushik Mitra..

## Skills

Programming Python, C/C++, CUDA programming, MATLAB.

Libraries PyTorch, Tensorflow, Torch, OpenCV, Gym-OpenAI, Caffe (Familiar), Lua (familiar).

## Recent Course-works

- Reinforcement Learning, Deep Learning, Image Processing, Geometry and Photometry-based Computer Vision, Linear Algebra, Probability Foundations, Digital Signal Processing, Adaptive Signal Processing.

## References

### **Dr. Rama Chellappa**

*Bloomberg Distinguished Professor*

*Johns Hopkins University*

✉ [rchella4@jhu.edu](mailto:rchella4@jhu.edu)

### **Dr. Kaushik Mitra**

*Assistant Professor, Department of*

*Electrical Engineering*

IIT Madras

✉ [kmitra@ee.iitm.ac.in](mailto:kmitra@ee.iitm.ac.in)

### **Dr. A.N. Rajagopalan**

*Professor, Department of*

*Electrical Engineering*

IIT Madras

✉ [raju@ee.iitm.ac.in](mailto:raju@ee.iitm.ac.in)