Nithin Gopalakrishnan Nair

Contact Information	3501 Saint Paul St Apt. 935 Baltimore, MD, USA	E-mail: ngopala2@jhu.edu Webpage: https://nithin-gk.github.io/ On networks:

Research Interests Deep Learning, Computer Vision, Image Restoration

Research Statement I work on problems in computer vision, more specifically on Image restoration, My research primarily focuses on Image restoration and deep generative modelling. Specifically I use generative models for multiple downstream tasks including Image synthesis, Image editing, Image translation as well as Image restoration

Education

Johns Hopkins University Maryland, USA

Ph.D candidate in Electrical and Computer Engineering 2021-Present

- Key courses: *Machine Intelligence, Vision as Bayesian Inference, Probabilistic Machine Learning, Compressed Sensing*
- Ph.D advisor: Dr. Vishal M Patel

Indian Institute of Technology Madras Chennai, India

B.Tech & M.Tech in Electrical Engineering 2015-2020

- Key courses: *Deep Learning,Machine Learning, Probability, Statistics and Stochastic Processes, Linear Algebra for Engineers, Probabilistic Graphical Models*
- Dual degree Thesis: 'Uncontstrained Dynamic Scene Deblurring for Dual lens Cameras'
- Dual Degree project advisor: Prof. A.N. Rajagopalan

Publications

Nithin Gopalakrishnan Nair, Kangfu Mei, Vishal Patel, AT-DDPM: Restoring Faces degraded by Atmospheric Turbulence using Denoising Diffusion Probabilistic Models, IEEE WACV 2023

Nithin Gopalakrishnan Nair, Vishal Patel, T2V-DDPM: Thermal to Visible Face Translation using Denoising Diffusion Probabilistic Models, IEEE FG 2023

Nithin Gopalakrishnan Nair, Kangfu Mei, Vishal Patel, A comparison of different atmospheric turbulence simulation methods for image restoration, ICIP 2022

Nithin Gopalakrishnan Nair, Rajeev Yasarla, Vishal Patel, NBD-GAP: Non-Blind Image Deblurring Without Clean Target Images, ICIP 2022

Nithin Gopalakrishnan Nair, Rajeev Yasarla Vishal Patel, Confidence Guided

Network For Atmospheric Turbulence Mitigation, ICIP 2021

Nithin Gopalakrishnan Nair, Kangfu Mei, Vishal Patel, Denoising Diffusion Restoration Priors, Under review 2022

Mahesh Mohan MR, **Nithin Gopalakrishnan Nair**, AN Rajagopalan, Deep Dynamic Scene Deblurring for Unconstrained Dual-Lens Cameras, TIP 2021

Experience

Vision and Image Understanding Lab, Johns Hopkins University

Graduate Research Assistant Sept 2020-Present

Research in the department of Electrical and Computer Engineering on Supervised and Semi-supervised Image restoration techniques, advised by Dr. Vishal Patel.

Image Processing and Computer Vision Lab, IIT Madras

Graduate Research Assistant May 2019-August 2020

Research in the department of Electrical Enginnering on Image restoration techniques focusing on dual lens cameras, advised by Dr. AN Rajagopalan.

Awards and Scholastic Achievements

- All India Rank 454 in Joint Engineering Entrance (Advanced) 2015 from over 1.5 million candidates.
- State rank 4 in KEAM 2015 from over 200,000 candidates.
- Awarded certificate for being among the top 0.1% in AISSCE 2015 by Central Board of Secondary Education, India.
- Awarded Kishore Vaigyanik Protsahan Yojana Scholarship 2014, by the Government of India, given to top 1000 from 300,000 candidates to pursure study in Sciences.

Software Skills

Languages: Python, C++, LaTeX
Libraries: PyTorch, TensorFlow, NumPy, OpenCV, Scikit-learn
Applications and tools: Git, MATLAB

Co-Curricular Activities

Social Initiatives

- Volunteered for a project aimed at increasing content in vernacular languages in Wikipedia. Contributed around 10 articles for the same. (Sept 2015 - April 2016)
- Led a team of 17 students for providing education to under-privileged children in high school. (Sept 2016 - April 2017)
- Part of the managerial team of National Service Scheme, India, which oversaw 10 student-run projects. Mentored two projects personally as a member of the "Projects" team. (Aug 2017 - Jan 2018)