

Nikhil Akalwadi

Center of Excellence in Visual Intelligence
KLE Technological University

Portfolio: <https://nikhilakalwadi.github.io>
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Education

KLE Technological University

MS (Engg) by Research 2023-present
B.E. in Electronics and Communication 2018-2022

ICS Mahesh PU College

Pre-University 2016-2018

Academic Positions

KLE Technological University

Undergraduate Researcher 2021-2022
(Advised by Uma Mudenagudi, Ramesh Ashok Tabib)

Undergraduate Researcher 2020-2021
(Advised by Ramesh Ashok Tabib, Ujwala Patil)

Industry Experience

Research Assistant, **CEVI-KLETech.** 2022-present

Computer Vision Researcher (Internship), **CEVI-KLETech.** Jan-May 2022

Hardware Design Engineer (Internship), **Eartkey Pvt. Ltd.,** Aug 2020-Mar 2021

Professional Activity

Reviewing

IEEE Transactions on Image Processing 2024

Women in Computer Vision @ IEEE/CVF CVPR 2024

Women in Computer Vision @ IEEE/CVF ICCV 2023

Program Participant

3D Vision Summer School 2022,2023

Teaching and Mentorship

Teaching Assistant

AICTE ATAL Faculty Development Program, KLETech. 2023
(Python, HandsOn Computer Vision and Machine Learning)

Summer School on Visual Intelligence, CEVI-KLETech. 2022,2023

Mentorship

Summer School on Visual Intelligence, CEVI-KLETech. 2021,2022,2023

Technical Skills

Programming Languages: Python, C, C++, Java, MATLAB, C#, JavaScript

Frameworks: HTML, CSS3

Libraries: PyTorch, Tensorflow, Pandas, Lumpy, Matplotlib, Sklearn, Scipy

Dev Tools: VSCode, Spyder, Jupyter, Git, GitHub, GIMP, Blender, Android Studio, Docker

OS: Linux, MacOS, Windows

Embedded Systems: Raspberry Pi, Arduino, 8051, ARM Cortex

Publications

Conferences

1. Ghodesawar, Allabakash, Vinod Patil, Ankit Raichur, Swaroop Adrashyappanmath, Sampada Malagi, Nikhil Akalwadi, Chaitra Desai, Ramesh Ashok Tabib, Ujwala Patil, and Uma Mudenagudi. "DeFlare-Net: Flare Detection and Removal Network." In ***International Conference on Pattern Recognition and Machine Intelligence***, pp. 465-472. Cham: Springer Nature Switzerland, 2023.

Workshop Publications

1. Desai, Chaitra, Nikhil Akalwadi, Amogh Joshi, Sampada Malagi, Chinmayee Mandi, Ramesh Ashok Tabib, Ujwala Patil, and Uma Mudenagudi. "LightNet: Generative Model for Enhancement of Low-Light Images." In ***Proceedings of the IEEE/CVF International Conference on Computer Vision***, pp. 2231-2240. 2023.

Posters/Abstract Papers

1. Desai, Chaitra, Nikhil Akalwadi, Amogh Joshi, Sampada Malagi, Chinmayee Mandi, Ramesh Ashok Tabib, Ujwala Patil, and Uma Mudenagudi. "LightNet: Generative Model for Enhancement of Low-Light Images." In ***Proceedings of the IEEE/CVF Computer Vision and Pattern Recognition***. *Accepted as Poster*
2. Malagi, Sampada, Nikhil Akalwadi, Amogh Joshi, Chaitra Desai, Ramesh Ashok Tabib, Ujwala Patil, and Uma Mudenagudi. "ViD: Vision in Dark" In ***Proceedings of the IEEE/CVF Computer Vision and Pattern Recognition***. *Accepted as Poster*

Challenge/Technical Reports

1. Dai, Yuekun, Chongyi Li, Shangchen Zhou, Ruicheng Feng, Qingpeng Zhu, Qianhui Sun, Wenxiu Sun et al. "MIPI 2023 Challenge on Nighttime Flare Removal: Methods and Results." In ***Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition***, pp. 2852-2862. 2023. *Top 10 Teams (ranked #8)*
2. Ershov, Egor, Alex Savchik, Denis Shepelev, Nikola Banić, Michael S. Brown, Radu Timofte, Karlo Koščević et al. "NTIRE 2022 challenge on night photography rendering." In ***Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition***, pp. 1287-1300. 2022. *Top 15 Teams (ranked #12)*

Projects and Research

1. Multispectral Image Analysis Towards Precision Agriculture

During my undergraduate program, I worked with Prof. Uma Mudenagudi on multispectral image analysis pipeline for precision agriculture. My work focused on processing spectral images to assess crop and soil health. I developed libraries for integrating spectral cameras and preprocessing captured data.

2. Low-Light Image Enhancement

In my academic pursuits, I focused on low-light image enhancement under the guidance of **Prof. Uma Mudenagudi**. I published **"LightNet: Generative Model for Enhancement of Low-Light Images."** to improve image quality in challenging low-light conditions and also achieved 13th rank in the **NTIRE 2022 Challenge at CVPR**, sharing valuable insights with the research community.

3. Image Annotation QC Tool

In collaboration with the **CEVI-SEED (Student Ecosystem for Engineered Data) Lab**, this tool has been meticulously **developed to assess the quality of annotated images**. Leveraging the expertise of the lab, the tool serves as a valuable resource for evaluating the precision and accuracy of image annotations in diverse applications.