Nikhil Akalwadi

Center of Excellence in Visual Intelligence
KLE Technological University

Portfolio: https://nikhilakalwadi.github.io
Email: nikhil.akalwadi@kletech.ac.in

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 Transaction 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

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)*

Conferences

3. Ghodesawar, Allabakash, Vinod Patil, Ankit Raichur, Swaroop Adrashyappanamath, 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.

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.