



Vijayalaxmi Ashok Aralikatti

Center of Excellence in Visual Intelligence

KLE Technological University

Portfolio

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Education

KLE Technological University

B.E. in Computer Science and Engineering

2021-2025

CGPA: 8.75 (until 6th semester)

Alva's PU College

Pre-University

2019-2021

(96.5%)

Academic Positions

KLE Technological University

Undergraduate Researcher (Advised by Prof. Uma Mudenagudi)

2023-present

Professional Activity

Program Participant

3D Vision Summer School, IIIT Bangalore

2024

Conference Attendee

The 9th National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics (**NCVPRIPG**), @ IIST Thiruvananthapuram

2024

Technical Skills

Programming Languages: C++, C, Python, JavaScript

Frameworks: HTML, CSS3, SQL

Libraries: PyTorch, Pandas, Numpy, Matplotlib, Sklearn

Dev Tools: VSCode, GitHub

OS: Linux, MacOS, Windows

Embedded Systems: Arduino

Certifications

- **Responsive Web Design** (*freeCodeCamp*)
- **Networking Basics** (*Cisco*)
- **SQL and Relational Databases 101** (*Cognitive Class by IBM*)
- **OOPs Concept in C++** (*GreatLearning*)
- **Become job-ready in coding: Basics of Data Structures** (*Simplilearn*)

Teaching and Mentorship

Teaching Assistant

Summer School on Visual Intelligence, CEVI-KLETech.

2024

Mentorship

Summer School on Visual Intelligence, CEVI-KLETech.

2024

Publications

Conferences

1. Dhulavvagol, Praveen M., S. Pritam, A. Vijayalaxmi, S. Raghav, and B. Sneha. "BEE Friendly Flora: Comparative Analysis of Plant Preference among Native and Non-Native Bee Species using EDA and Machine Learning Model." *Procedia Computer Science* **233** (2024): 841-850. ([Link](#))

Challenge/Technical Reports

2. Ancuti, Codruta O., Cosmin Ancuti, Florin-Alexandru Vasluianu, Radu Timofte, Yidi Liu, Xingbo Wang, Yurui Zhu et al. "NTIRE 2024 dense and non-homogeneous dehazing challenge report." In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, pp. 6453-6468. 2024. *Top 15 Teams (ranked #13 and #15)* ([Link](#))

Projects and Research

1. "Image Restoration and Enhancement", (Dept. of Science and Technology-Digital Poompuhar)

In my academic pursuits, I focused on low-light image enhancement under the guidance of **Prof. Uma Mudenagudi**. Here we worked on a hierarchical approach denoise images, contributing to the broader field of image restoration. Notably, HNN can be extended from image denoising to other image restoration tasks such as image dehazing, shadow removal, and image deblurring. These extensions are detailed in the challenge reports titled "*NTIRE 2024 Low-Light Enhancement Challenge Report*" and "*NTIRE 2024 Dense and Non-Homogeneous Dehazing Challenge Report*", where we achieved notable 11th and 9th ranks (globally) respectively.

2. "Development of an E-Learning Platform"

During my academic project, we developed an **e-learning platform** using **React** for the frontend and Spring Boot for the backend, ensuring alignment with sustainability development goals. The platform features an engaging user interface powered by React, while Spring Boot handles efficient content management and user interactions. I integrated essential functionalities, including real-time chat, course management, and automated certificate issuance, to create a comprehensive and user-friendly learning experience.

3. "Rope Walking Robot"

Our project focuses on developing an advanced **rope-walking robot designed for industrial applications**. This innovative robot can **traverse ropes or cables**, making it ideal for inspection, maintenance, and exploration in challenging environments such as power lines, construction sites, and offshore platforms. Equipped with precise sensors and adaptive control systems, the robot ensures stability and efficiency while navigating complex pathways. Its deployment aims to enhance safety, reduce human risk, and improve operational efficiency in various industrial sectors.

4. "Histopathological Slide Image Analysis for Early Detection of Oral Cancer"

(Vision Group of Science and Technology, Government of Karnataka)

In my academic pursuits, we concentrated on the application of **deep learning techniques for the analysis of histopathological slide images**, aiming to achieve **early detection of oral cancer**. By leveraging convolutional neural networks (CNNs), our research focused on accurately **classifying and identifying malignant cells in oral tissue samples**. This approach has the potential to **enhance diagnostic accuracy, expedite the detection process**, and improve patient outcomes by facilitating timely and effective treatment interventions.