# ALVA’S INSTITUTE OF ENGINEERING AND TECHNOLOGY

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**Accredited by NACC with A+ Grade**

Shobavana Campus, Mijar, Moodbidri, D.K., Karnataka

**DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

**CERTIFICATE**

This is to certify that the Mini Project entitled **“HISTOGRAM EQUALIZATION: ENHANCING COLOR IMAGES”** has been successfully completed and report submitted in A.Y 2024-25. It is certified that all corrections/suggestions indicated Presentation session have been incorporated in the report and deposited in the department library.

The assignment was evaluated and group members marks as indicated below

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SI** | **USN** | **NAME** | **Presentation Skill (5)** | **Report (15)** | **Subject Knowledge (3)** | **Question and Answer (2)** | **Total Marks (25M)** |
| 1 | 4AL21AI025 | NIKHITHA H R |  |  |  |  |  |
| 2 | 4AL21AI032 | PRATHIKSHA E |  |  |  |  |  |
| 3 | 4AL21AI045 | SHETTY CHINTAN ASHOK |  |  |  |  |  |
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| **NIKHITHA H R** | **4AL21AI025** |
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# ABSTRACT

This report details the implementation of Histogram Equalization (HE) for enhancing the contrast and visual quality of grayscale images using the Scilab programming environment. The project aims to develop a robust and efficient system for HE, addressing challenges like noise amplification and over-enhancement while maintaining the naturalness of the enhanced images. The report outlines the methodology, including image loading, histogram calculation, normalization, CDF generation, scaling, pixel mapping, and visualization of results. The effectiveness of HE is demonstrated through visual comparisons of the original and enhanced images and their corresponding histograms, validating the accuracy and utility of the implemented method. The project also emphasizes the importance of preprocessing in image enhancement, the value of visual validation, and the improvement of Scilab programming skills.

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