# A

# Practical Activity Report

# on

# Cartoonifying an Image

# for

**ELC Activity (Assignment on Real-time applications on Computer Vision using MATLAB and Python)**

**Submitted by:**

# Epuru Abhiram

# Roll. No. 102203173

# Lokeswar Reddy

# Roll. No. 102203156

# 2CO5, 3rd SEMESTER



**2023**

**Thapar Institute of Engineering and Technology**

**Computer Engineering Department**

***(Declared as Deemed-to-be-University u/s 3 of the UGC Act., 1956)***

**Post Bag No. 32, Patiala – 147004**

**Punjab (India)**

**PROJECT OVERVIEW**

The primary objective of this project is to develop an image cartoonization application using the OpenCV library. The application should be able to load an image from the user's system, apply cartoonization effects, and display the transformed image. The cartoonization process should involve various image processing techniques, such as grayscale conversion, edge detection, and image blending, to achieve the desired cartoon-like appearance. OpenCV, a popular open-source computer vision library, provides a comprehensive set of tools for image processing and manipulation, making it an ideal platform for cartoonization tasks.

**Key Features:**

1. **Grayscale Conversion: Converting the image to grayscale removes color information, focusing on the intensity values of each pixel.**
2. **Edge Detection: Identifying and enhancing the edges in the grayscale image creates the distinct outlines characteristic of cartoons.**
3. **Image Blending: Combining the grayscale image with the edge-detected image results in a cartoon-like representation with prominent edges and simplified details.**
4. **Color Adjustment: Optionally, adjusting the colors of the cartoonifed image can further enhance the cartoonish style.**
5. **Final Display**: **Enabling users to transform realistic images into captivating cartoon-like representations**

**Requirements:**

* Python 3.x
* OpenCV (cv2) library
* cvzone library
* csv library

**Usage:**

1. Photo Editing: Cartoonizing personal photos adds a creative touch and unique visual appeal.
2. Graphic Design: Creating cartoon illustrations for advertisements, presentations, and educational materials.
3. Animation Production: Generating cartoon-style frames for animated sequences.
4. Art and Entertainment: Developing interactive cartoonization tools for artistic expression and entertainment purposes..
5. Medical Imaging: Image cartoonization can be used to enhance the visualization of medical images, making it easier for doctors to identify abnormalities and diagnose diseases.

**Conclusion:**

Image cartoonization is a versatile technique with a wide range of applications. By leveraging the power of OpenCV, this project provides a practical tool for transforming realistic images into captivating cartoon-like representations. This technology holds immense potential in various domains, including photo editing, graphic design, animation production, art and entertainment, medical imaging, satellite imagery, surveillance, education, and cultural preservation.