DSA0210 Computer Vision with Open CV LAB Experiments

Experiment- 7: Perform Affine Transformation on the image.

PROGRAM:

import cv2

import numpy as np

import matplotlib.pyplot as plt

Read the input image

img = cv2.imread(r"D:\New Folder\input.jpeg")

Check if image is loaded

if img is None:

   raise FileNotFoundError("Image not found. Check the file path.")

Get image dimensions

height, width = img.shape[:2]

Define three points in the original image

pts1 = np.float32([

   [50, 50],

   [200, 50],

   [50, 200]

])

Define three corresponding points in the output image

pts2 = np.float32([

   [10, 100],

   [200, 50],

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    [100, 250]
])


# Get affine transformation matrix
affine_matrix = cv2.getAffineTransform(pts1, pts2)


# Apply affine transformation
affine_image = cv2.warpAffine(img, affine_matrix, (width, height))


# Display images
plt.figure(figsize=(8, 4))


plt.subplot(1, 2, 1)
plt.imshow(cv2.cvtColor(img, cv2.COLOR_BGR2RGB))
plt.title("Original Image")
plt.axis("off")


plt.subplot(1, 2, 2)
plt.imshow(cv2.cvtColor(affine_image, cv2.COLOR_BGR2RGB))
plt.title("Affine Transformed Image")
plt.axis("off")


plt.tight_layout()
plt.show()
```

OUTPUT:

Original Image   Affine Transformed Image