

DSA0210 Computer Vision with Open CV LAB Experiments

Experiment- 5: Perform Rotation of an image to clockwise and counter clockwise direction.

PROGRAM:

```
import cv2
```

```
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]
```

```
# Find the center of the image
```

```
center = (width // 2, height // 2)
```

```
# Rotate clockwise (-45 degrees)
```

```
matrix_clockwise = cv2.getRotationMatrix2D(center, -90, 1.0)
```

```
clockwise = cv2.warpAffine(img, matrix_clockwise, (width, height))
```

```
# Rotate counter-clockwise (+45 degrees)
```

```
matrix_counter = cv2.getRotationMatrix2D(center, 90, 1.0)
```

```
counter_clockwise = cv2.warpAffine(img, matrix_counter, (width, height))
```

```
# Display images
```

```
plt.figure(figsize=(10, 4))

plt.subplot(1, 3, 1)
plt.imshow(cv2.cvtColor(img, cv2.COLOR_BGR2RGB))
plt.title("Original Image")
plt.axis("off")

plt.subplot(1, 3, 2)
plt.imshow(cv2.cvtColor(clockwise, cv2.COLOR_BGR2RGB))
plt.title("Clockwise Rotation")
plt.axis("off")

plt.subplot(1, 3, 3)
plt.imshow(cv2.cvtColor(counter_clockwise, cv2.COLOR_BGR2RGB))
plt.title("Counter-Clockwise Rotation")
plt.axis("off")

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

OUTPUT:

