

231501037

**EXP NO: 02**

**DATE:** 11-07-2025

## **Contrast Adjustment**

**Aim:** To Implement contrast adjustment of an image.

**Algorithm:**

1. Read the input image in grayscale.
2. Normalize pixel values or use histogram stretching.
3. Apply formula: output = alpha \* input + beta (alpha = contrast, beta = brightness).
4. Clip values to [0,255] range.
5. Display original and adjusted images.
6. Save the adjusted image.

**Code:**

```
from google.colab.patches import cv2_imshow
import cv2

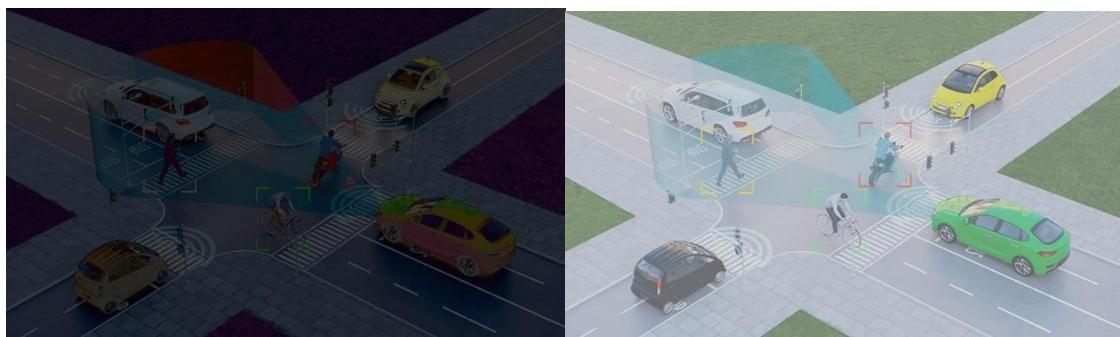
img = cv2.imread('/content/drive/MyDrive/input.jpg')
alphas = [0.5, 2.0] # contrast factors
betas = [-50, 100] # brightness shifts

for a in alphas:
    for b in betas:
        adjusted = cv2.convertScaleAbs(img, alpha=a, beta=b)
        cv2_imshow(adjusted) # Use cv2_imshow instead of cv2.imshow
        cv2.imwrite(f"output_alpha{a}_beta{b}.jpg", adjusted)

cv2_imshow(img) # Use cv2_imshow instead of cv2.imshow
cv2.waitKey(0)
cv2.destroyAllWindows()
```

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**Output:**



**Result:** Thus, contrast adjustment of an image implemented successfully.