231501008

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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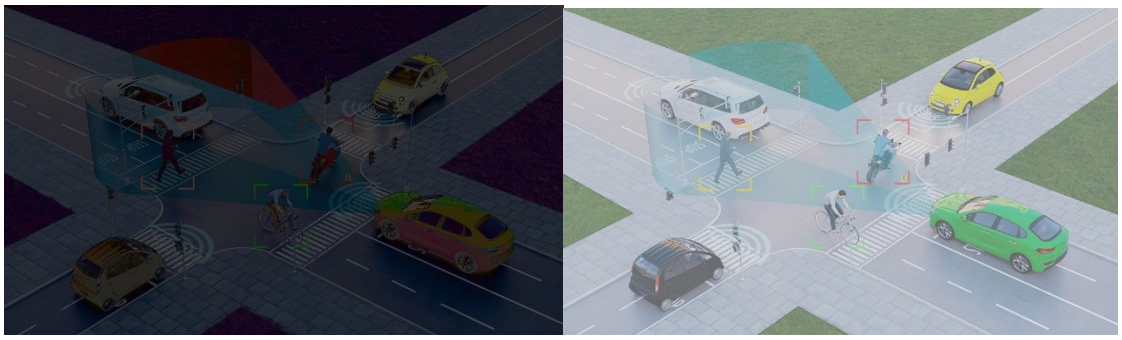
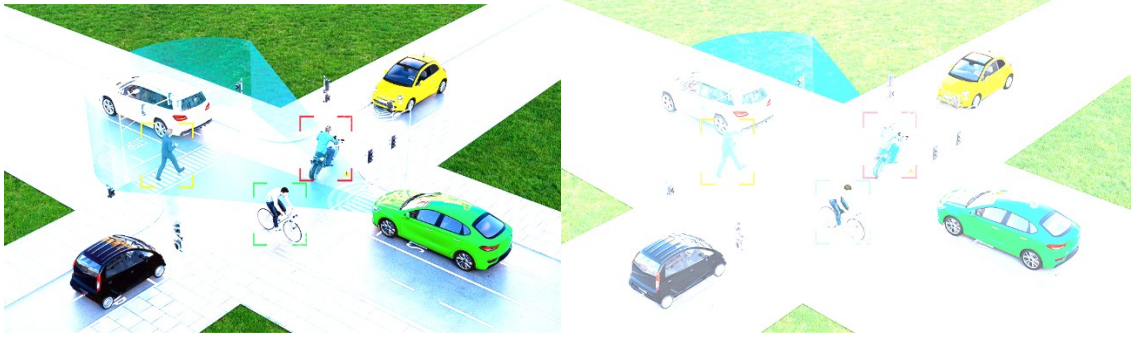
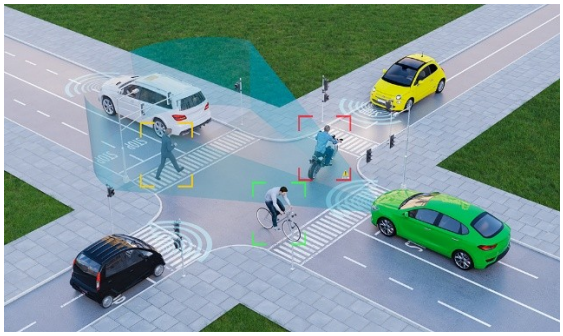
Output:







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