High Boost Masks.py - C:/Users/chgan/AppData/Local/Programs/Python/Python311/Hi...

File Edit Format Run Options Window Help

```python
import cv2
import numpy as np

# Read the image
image_path = r"C:\Users\chgan\Downloads\SMUDGE.jpeg"
image = cv2.imread(image_path)

# Convert to grayscale
gray_image = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)

# Define the kernel for high-boost filtering
k = 1.5  # High-boost factor (adjust as needed)
blurred = cv2.GaussianBlur(gray_image, (7, 7), 0)
mask = gray_image - blurred
high_boost_image = gray_image + k * mask

# Clip values to the valid range [0, 255] and convert to uint8
high_boost_image = np.clip(high_boost_image, 0, 255).astype(np.uint8)

# Save and display the result
output_path = r"C:\Users\chgan\Downloads\Sharpened_SMUDGE.jpeg"
cv2.imwrite(output_path, high_boost_image)
cv2.imshow("Sharpened Image", high_boost_image)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Ln: 9 Col: 0

High Boost Ma...

Previous

146%

Gradient Masking.py - C:/Users/chgan/AppData/Local/Programs/Python/Python311/Gr...

File Edit Format Run Options Window Help

```
import cv2
import numpy as np
image_path = r"C:\Users\chgan\Downloads\SMUDGE.jpeg"
image = cv2.imread(image_path)
gray_image = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)
grad_x = cv2.Sobel(gray_image, cv2.CV_64F, 1, 0, ksize=3)
grad_y = cv2.Sobel(gray_image, cv2.CV_64F, 0, 1, ksize=3)
grad_magnitude = cv2.magnitude(grad_x, grad_y)
grad_magnitude = cv2.normalize(grad_magnitude, None, 0, 255, cv2.NORM_MINMAX)
grad_magnitude = grad_magnitude.astype(np.uint8)
alpha = 1.0
sharpened_image = cv2.addWeighted(gray_image, 1 + alpha, grad_magnitude, -alp
output_path = r"C:\Users\chgan\Downloads\Sharpened_SMUDGE_Gradient.jpeg"
cv2.imwrite(output_path, sharpened_image)
cv2.imshow("Sharpened Image", sharpened_image)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

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Gradient Maski...

146%

Watermarked Imag...


85%

Water Mark.py - C:/Users/chgan/AppData/Local/Programs/Python/Py...

File Edit Format Run Options Window Help

```
import cv2
img = cv2.imread(r"C:\Users\chgan\Downloads\Telegram Desktop\UNFA
wm = cv2.imread(r"C:\Users\chgan\Downloads\Telegram Desktop\TOP G
h_wm, w_wm = wm.shape[:2]
h_img, w_img = img.shape[:2]
if h_wm > h_img or w_wm > w_img:
    print("Watermark is larger than the main image. Resizing the
    scale_w = w_img / w_wm
    scale_h = h_img / h_wm
    scale = min(scale_w, scale_h)
    wm = cv2.resize(wm, (int(w_wm * scale), int(h_wm * scale)))
    h_wm, w_wm = wm.shape[:2]
center_x = int(w_img / 2)
center_y = int(h_img / 2)
top_y = center_y - int(h_wm / 2)
left_x = center_x - int(w_wm / 2)
bottom_y = top_y + h_wm
right_x = left_x + w_wm
roi = img[top_y:bottom_y, left_x:right_x]
result = cv2.addWeighted(roi, 1, wm, 0.3, 0)
img[top_y:bottom_y, left_x:right_x] = result
cv2.imwrite(r"C:\Users\chgan\Downloads\Telegram Desktop\Watermark
cv2.imshow("Watermarked Image", img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Ln: 26 Col: 0

image copy.png


73%

Img Operations.py - C:/Users/chgan/AppData/Local/Programs/Python/Python311/Img...

File Edit Format Run Options Window Help

```
import cv2
import numpy as np
image = cv2.imread(r"C:\Users\chgan\Downloads\Telegram Desktop\T & G.jpg")
img2 = cv2.imread(r"C:\Users\chgan\Downloads\Telegram Desktop\T & G.jpg")
print(image.shape)
cv2.imshow("original", image)
imageCopy = image.copy()
cv2.circle(imageCopy, (100, 100), 30, (255, 0, 0), -1)
cv2.imshow('image', image)
cv2.imshow('image copy', imageCopy)
cropped_image = image[80:280, 150:330]
cv2.imshow("cropped", cropped_image)
cv2.imwrite("Cropped Image.jpg", cropped_image)
dst = cv2.addWeighted(image, 0.5, img2, 0.7, 0)
img_arr = np.hstack((image, img2))
cv2.imshow('Input Images',img_arr)
cv2.imshow('Blended Image',dst)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Ln: 17 Col: 32

100%

Img Boundary.py - C:/Users/chgan/AppData/Local/Programs/Python/Python311/Img B...

File Edit Format Run Options Window Help

```python
import cv2
import numpy as np
img = cv2.imread(r"C:\Users\chgan\Downloads\Telegram Desktop\TOP G&T.jpg")
dx = cv2.Sobel(img, cv2.CV_64F, 1, 0)
dy = cv2.Sobel(img, cv2.CV_64F, 0, 1)
edges = cv2.magnitude(dx, dy)
thresh = 100
edges[edges < thresh] = 0
edges[edges >= thresh] = 255
cv2.imshow("Edges", edges)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Ln: 13 Col: 0

Imgae Boundar...

73%

Morphological Op.py - C:/Users/chgan/AppData/Local/Programs/Python/Python311/...

File Edit Format Run Options Window Help

```
import cv2
import numpy as np
img = cv2.imread(r"C:\Users\chgan\Downloads\Telegram Desktop\TOP G&T.jpg", cv
kernel = np.ones((5,5), np.uint8)
erosion = cv2.erode(img, kernel, iterations=1)
cv2.imshow("Original", img)
cv2.imshow("Erosion", erosion)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Ln: 10 Col: 0

Morphological....

73%

MP with Dilation.py - C:/Users/chgan/AppData/Local/Programs/Python/Python311/MP...

File Edit Format Run Options Window Help

```
import cv2
import numpy as np
img = cv2.imread(r"C:\Users\chgan\Downloads\Telegram Desktop\TOP G&T.jpg", cv
kernel = np.ones((5,5), np.uint8)
dilation = cv2.dilate(img, kernel, iterations=1)
cv2.imshow("Original", img)
cv2.imshow("Dilation", dilation)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Ln: 10 Col: 0

Dilation.png

73%

MP with opening.py - C:/Users/chgan/AppData/Local/Programs/Python/Python311/M...

File Edit Format Run Options Window Help

```
import cv2
import numpy as np
img = cv2.imread(r"C:\Users\chgan\Downloads\LEWIS & LECLERC.jpg", cv2.IMREAD_
kernel = np.ones((5,5), np.uint8)
opening = cv2.morphologyEx(img, cv2.MORPH_OPEN, kernel)
cv2.imshow("Original", img)
cv2.imshow("opening", opening)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Ln: 10 Col: 0

opening.png

23%

MP with closing.py - C:/Users/chgan/AppData/Local/Programs/Python/Python311/MP...

File Edit Format Run Options Window Help

```
import cv2
import numpy as np
img = cv2.imread(r"C:\Users\chgan\Downloads\LEWIS & LECLERC.jpg", cv2.IMREAD_
kernel = np.ones((5,5), np.uint8)
closing = cv2.morphologyEx(img, cv2.MORPH_CLOSE, kernel)
cv2.imshow("Original", img)
cv2.imshow("Closing", closing)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Ln: 10 Col: 0

Closing.png

23%

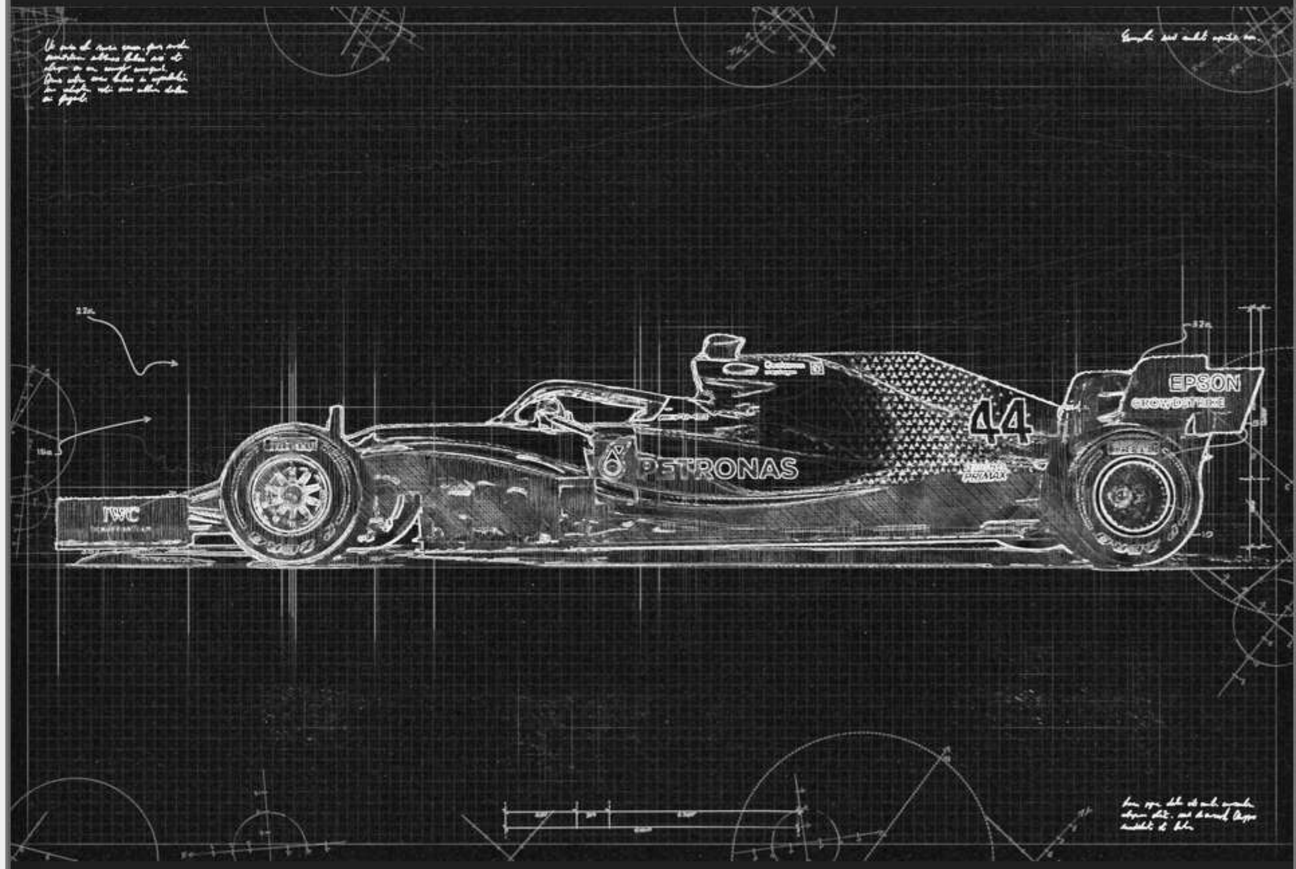
MP with Gradient.py - C:/Users/chgan/AppData/Local/Programs/Python/Python311/M...

File Edit Format Run Options Window Help

```python
import cv2
import numpy as np
img = cv2.imread(r"C:\Users\chgan\Downloads\W13.jpg", cv2.IMREAD_GRAYSCALE)
kernel = np.ones((5, 5), np.uint8)
grad = cv2.morphologyEx(img, cv2.MORPH_GRADIENT, kernel)
cv2.imshow("Original", img)
cv2.imshow("Gradient", grad)
cv2.waitKey(0)
output_path = r"C:\Users\chgan\Documents\Gradient_W13.jpg"
cv2.imwrite(output_path, grad)
cv2.destroyAllWindows()
```

Ln: 12 Col: 0

Gradient.png




19%

Img Sharpening.py - C:/Users/chgan/AppData/Local/Programs/Python/Python311/Img...

File Edit Format Run Options Window Help

```
import cv2
import numpy as np
img = cv2.imread(r"C:\Users\chgan\Downloads\SMUDGE.jpeg")
gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)
laplacian_kernel = np.array([[0, 1, 0],
                             [1, -4, 1],
                             [0, 1, 0]])
laplacian = cv2.filter2D(gray, -1, laplacian_kernel)
sharpened = cv2.add(gray, laplacian)
cv2.imshow('Original Image', gray)
cv2.imshow('Sharpened Image', sharpened)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Ln: 14 Col: 0

Sharpened Ima...

100%