

```
# Specify the path to your zip file
zip_file_path = '/content/fMRI dataset.zip'

# Unzip the file in the same directory
!unzip -q "/content/fMRI dataset.zip"

# List the contents of the current directory
!ls

'fMRI dataset.zip'  model  sample_data

# Install necessary libraries
!pip install matplotlib scikit-image

# Import libraries
import matplotlib.pyplot as plt
from skimage import exposure
from PIL import Image
import numpy as np

# Load the fMRI PNG image (replace 'your_image.png' with your file name)
image_path = '/content/model/train/afraid/Chanvol_181slice_1.png'
img = Image.open(image_path)

# Convert the image to a NumPy array
img_array = np.array(img)

# Apply contrast stretching for enhancement
enhanced_img = exposure.rescale_intensity(img_array, in_range=(0, 255), out_range=(0, 255))

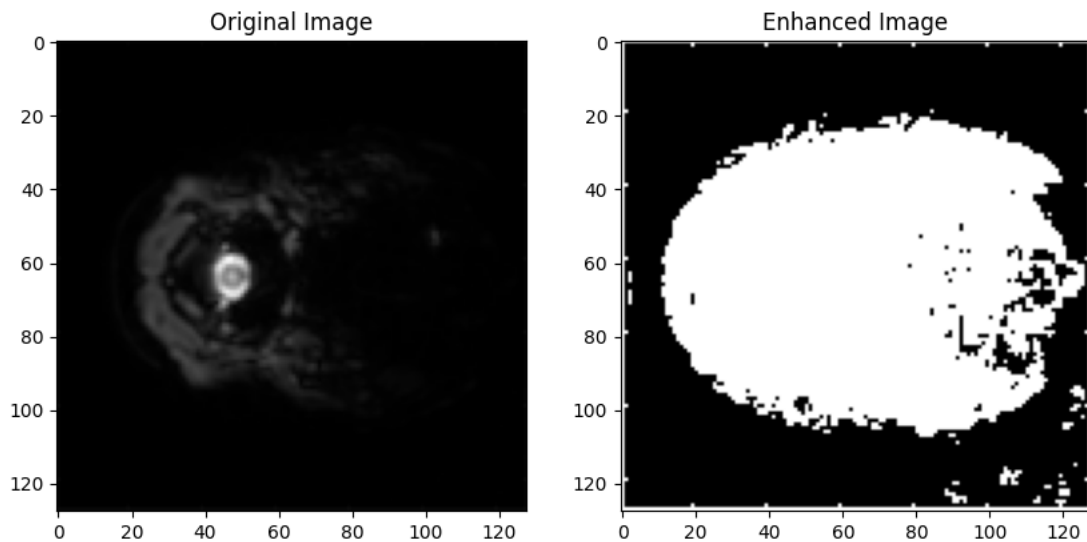
# Visualize the original and enhanced images
plt.figure(figsize=(10, 5))

plt.subplot(1, 2, 1)
plt.imshow(img_array, cmap='gray')
plt.title('Original Image')

plt.subplot(1, 2, 2)
plt.imshow(enhanced_img, cmap='gray')
plt.title('Enhanced Image')

plt.show()
```

Requirement already satisfied: matplotlib in /usr/local/lib/python3.10/dist-packages (3.7.1)
 Requirement already satisfied: scikit-image in /usr/local/lib/python3.10/dist-packages (0.19.3)
 Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (1.2.0)
 Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (0.12.1)
 Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (4.47.2)
 Requirement already satisfied: kiwisolver>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (1.4.5)
 Requirement already satisfied: numpy>=1.20 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (1.23.5)
 Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (23.2)
 Requirement already satisfied: pillow>=6.2.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (9.4.0)
 Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (3.1.1)
 Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (2.8.2)
 Requirement already satisfied: scipy>=1.4.1 in /usr/local/lib/python3.10/dist-packages (from scikit-image) (1.11.4)
 Requirement already satisfied: networkx>=2.2 in /usr/local/lib/python3.10/dist-packages (from scikit-image) (3.2.1)
 Requirement already satisfied: imageio>=2.4.1 in /usr/local/lib/python3.10/dist-packages (from scikit-image) (2.31.6)
 Requirement already satisfied: tifffile>=2019.7.26 in /usr/local/lib/python3.10/dist-packages (from scikit-image) (2023.12.9)
 Requirement already satisfied: PyWavelets>=1.1.1 in /usr/local/lib/python3.10/dist-packages (from scikit-image) (1.5.0)
 Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/dist-packages (from python-dateutil>=2.7->matplotlib) (1.16.0)
 WARNING:matplotlib.image:Clipping input data to the valid range for imshow with RGB data ([0..1] for floats or [0..255] for integers).



```
# Load the fMRI PNG image (replace 'your_image.png' with your file name)
image_path = '/content/model/train/calm/Chanvol_10slice_1.png'
img = Image.open(image_path)

# Convert the image to a NumPy array
img_array = np.array(img)

# Apply contrast stretching for enhancement
enhanced_img = exposure.rescale_intensity(img_array, in_range=(0, 255), out_range=(0, 255))

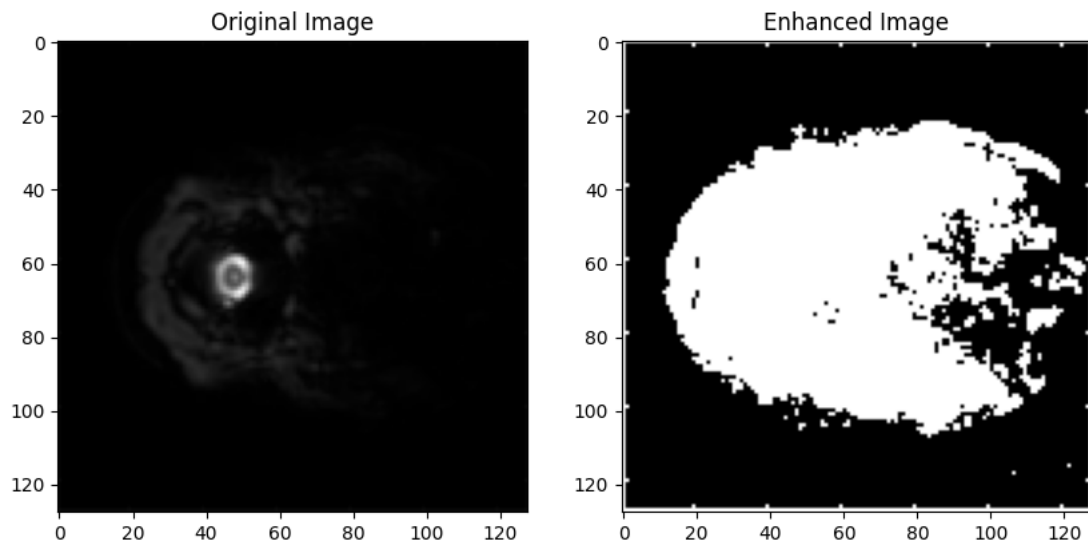
# Visualize the original and enhanced images
plt.figure(figsize=(10, 5))

plt.subplot(1, 2, 1)
plt.imshow(img_array, cmap='gray')
plt.title('Original Image')

plt.subplot(1, 2, 2)
plt.imshow(enhanced_img, cmap='gray')
plt.title('Enhanced Image')

plt.show()
```

WARNING:matplotlib.image:Clipping input data to the valid range for imshow with RGB data ([0..1] for floats or [0..255] for integers).



```
# Load the fMRI PNG image (replace 'your_image.png' with your file name)
image_path = '/content/model/train/delighted/Chanvol_101slice_3.png'
img = Image.open(image_path)

# Convert the image to a NumPy array
img_array = np.array(img)

# Apply contrast stretching for enhancement
enhanced_img = exposure.rescale_intensity(img_array, in_range=(0, 255), out_range=(0, 255))

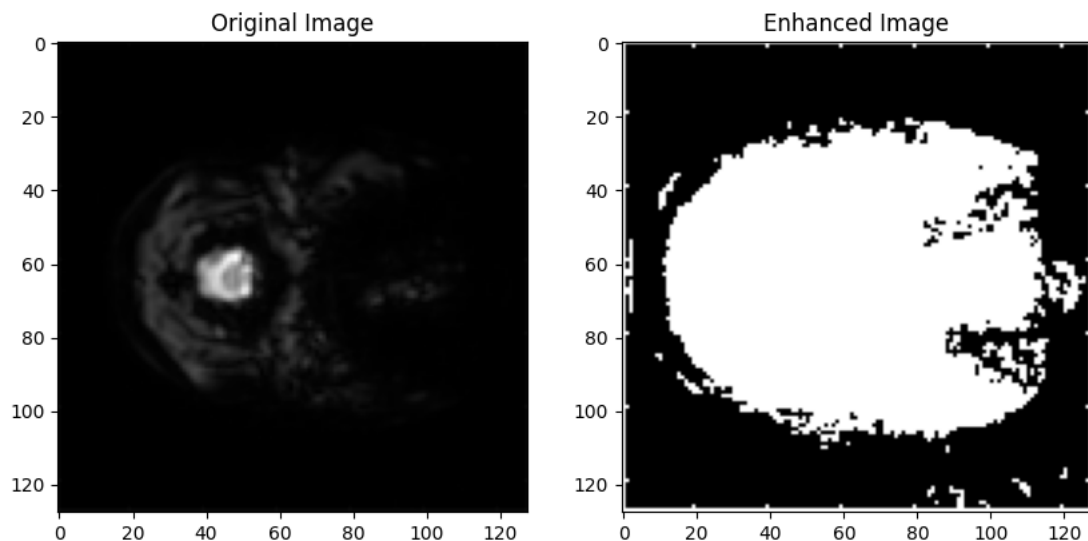
# Visualize the original and enhanced images
plt.figure(figsize=(10, 5))

plt.subplot(1, 2, 1)
plt.imshow(img_array, cmap='gray')
plt.title('Original Image')

plt.subplot(1, 2, 2)
plt.imshow(enhanced_img, cmap='gray')
plt.title('Enhanced Image')

plt.show()
```

WARNING:matplotlib.image:Clipping input data to the valid range for imshow with RGB data ([0..1] for floats or [0..255] for integers).



```
# Load the fMRI PNG image (replace 'your_image.png' with your file name)
image_path = '/content/model/train/depressed/Chanvol_121slice_17.png'
img = Image.open(image_path)

# Convert the image to a NumPy array
img_array = np.array(img)

# Apply contrast stretching for enhancement
enhanced_img = exposure.rescale_intensity(img_array, in_range=(0, 255), out_range=(0, 255))

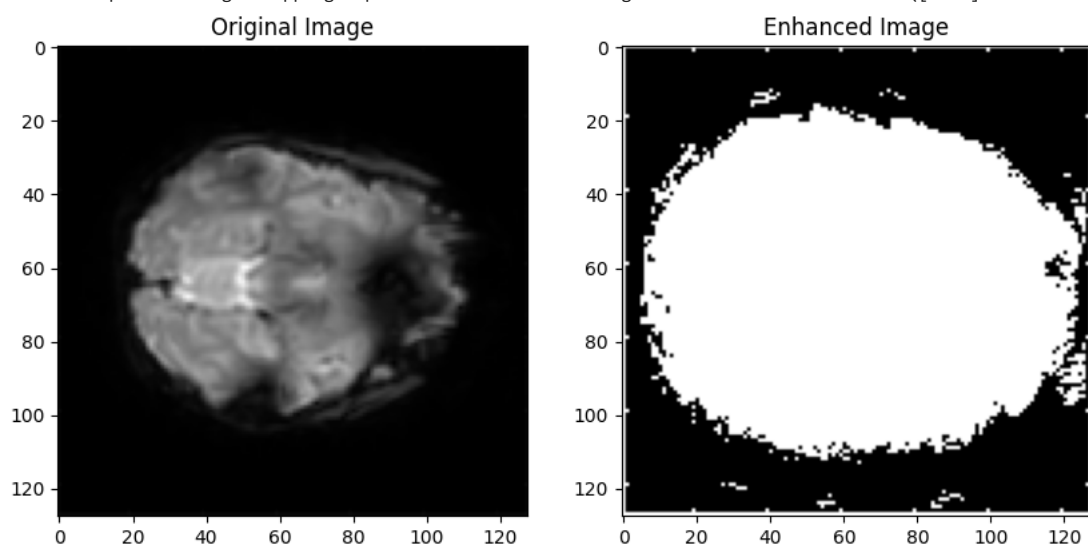
# Visualize the original and enhanced images
plt.figure(figsize=(10, 5))

plt.subplot(1, 2, 1)
plt.imshow(img_array, cmap='gray')
plt.title('Original Image')

plt.subplot(1, 2, 2)
plt.imshow(enhanced_img, cmap='gray')
plt.title('Enhanced Image')

plt.show()
```

WARNING:matplotlib.image:Clipping input data to the valid range for imshow with RGB data ([0..1] for floats or [0..255] for integers).



```
# Load the fMRI PNG image (replace 'your_image.png' with your file name)
image_path = '/content/model/train/depressed/Chanvol_122slice_2.png'
img = Image.open(image_path)

# Convert the image to a NumPy array
img_array = np.array(img)

# Apply contrast stretching for enhancement
enhanced_img = exposure.rescale_intensity(img_array, in_range=(0, 255), out_range=(0, 255))

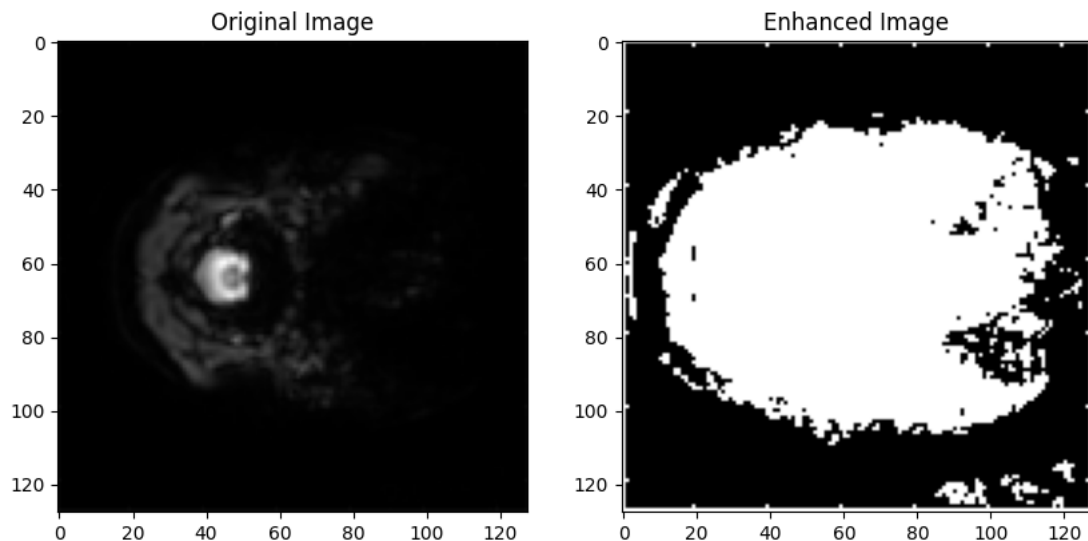
# Visualize the original and enhanced images
plt.figure(figsize=(10, 5))

plt.subplot(1, 2, 1)
plt.imshow(img_array, cmap='gray')
plt.title('Original Image')

plt.subplot(1, 2, 2)
plt.imshow(enhanced_img, cmap='gray')
plt.title('Enhanced Image')

plt.show()
```

WARNING:matplotlib.image:Clipping input data to the valid range for imshow with RGB data ([0..1] for floats or [0..255] for integers).



```
# Load the fMRI PNG image (replace 'your_image.png' with your file name)
image_path = '/content/model/train/depressed/Chanvol_62slice_3.png'
img = Image.open(image_path)

# Convert the image to a NumPy array
img_array = np.array(img)

# Apply contrast stretching for enhancement
enhanced_img = exposure.rescale_intensity(img_array, in_range=(0, 255), out_range=(0, 255))

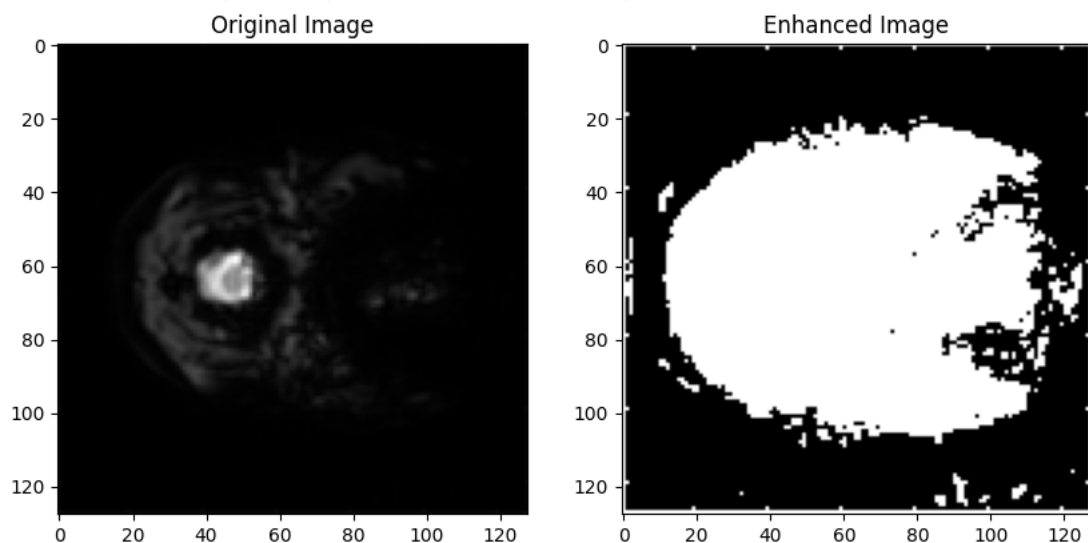
# Visualize the original and enhanced images
plt.figure(figsize=(10, 5))

plt.subplot(1, 2, 1)
plt.imshow(img_array, cmap='gray')
plt.title('Original Image')

plt.subplot(1, 2, 2)
plt.imshow(enhanced_img, cmap='gray')
plt.title('Enhanced Image')

plt.show()
```

WARNING:matplotlib.image:Clipping input data to the valid range for imshow with RGB data ([0..1] for floats or [0..255] for integers).



```
# Load the fMRI PNG image (replace 'your_image.png' with your file name)
image_path = '/content/model/train/excited/Chanvol_161slice_14.png'
img = Image.open(image_path)
```

```
# Convert the image to a NumPy array
img_array = np.array(img)

# Apply contrast stretching for enhancement
enhanced_img = exposure.rescale_intensity(img_array, in_range=(0, 255), out_range=(0, 255))

# Visualize the original and enhanced images
plt.figure(figsize=(10, 5))

plt.subplot(1, 2, 1)
plt.imshow(img_array, cmap='gray')
```