

To run this code, Steps running in a Jupyter Notebook

1. Install Required Libraries:

Open a terminal (command prompt) and install the necessary Python libraries using `pip`:

`pip install numpy pywavelets Pillow scipy matplotlib scikit-image opencv-python`

If you are using `conda`, you can also install packages via:

`conda install numpy pywavelets pillow scipy matplotlib scikit-image opencv`

2. Open Jupyter Notebook:

If you have Jupyter installed, you can start it by typing:

```
jupyter notebook
```

Write the code into a new notebook cell.

3. Place the Images:

Make sure `images.jpg` and `watermark.jpg` are in the same directory as your notebook.

-If not, specify the correct path in the code:

`img1 = Image.open('/path/to/your/images.jpg').resize((2048, 2048), Image.ANTIALIAS)`

`watermark1 = Image.open('/path/to/your/watermark.jpg').resize((size, size), Image.ANTIALIAS)`

4. Run the Notebook:

Execute the cells by selecting them and clicking "Run". The program will output the watermarked image and calculate PSNR, MSE, and entropy.

Else watch YouTube tutorial to the code and establish the required images

Before run the code, need to install python libraries

`pip install numpy pywavelets Pillow scipy matplotlib scikit-image opencv-python`

This will install:

NumPy: For numerical operations.

PyWavelets: For wavelet transforms.

Pillow: For image processing.

SciPy: For DCT operations.

Matplotlib: For plotting.

Scikit-image: For image metrics like SSIM.

OpenCV: For image reading and resizing.

Requirement : python environment to write the code in python and save it and need two images (images.jpg and watermark.jpg):

images.jpg: The host image.

watermark.jpg: The watermark image.

Place both of these images in the same folder for ease to use it