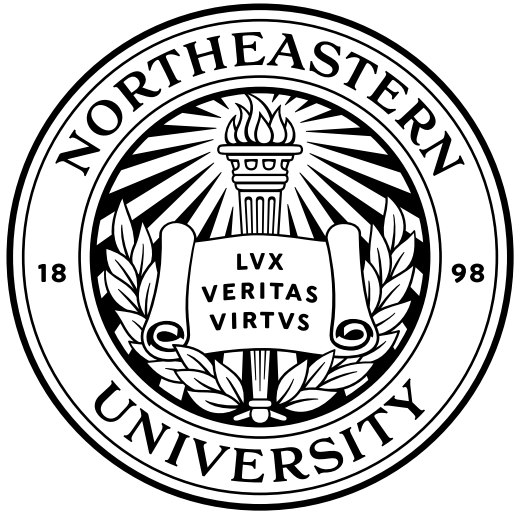

CS 5330: Pattern Recognition and Computer Vision

Northeastern University

OpenCV Workshop
Lab 2: Loading, Displaying, and Saving Images

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Loading, Displaying, and Saving Images

1. Loading images with OpenCV
2. Displaying images with OpenCV
3. Saving images with OpenCV

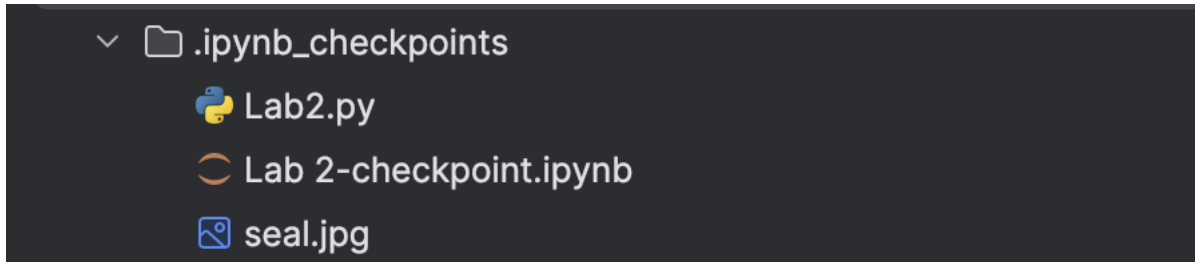
Information from: https://data-flair.training/blogs/read-display-save-image-opencv/

Loading Images with OpenCV

- img = cv2.imread(“seal.jpg”)
  - Using the cv2 python library
  - The imread function loads an image from the specified file
  - If the image cannot be read, empty matrix is returned
- gray_img = cv2.imread(“seal.jpg”, cv2.IMREAD_GRAYSCALE)
  - cv2.IMREAD_COLOR – It specifies to load a color image. Any transparency of image will be neglected. It is the default flag. Alternatively, we can pass integer value 1 for this flag.
  - cv2.IMREAD_GRAYSCALE – It specifies to load an image in grayscale mode. Alternatively, we can pass integer value 0 for this flag.
  - cv2.IMREAD_UNCHANGED – It specifies to load an image as such including alpha channel. Alternatively, we can pass integer value -1 for this flag.

https://www.geeksforgeeks.org/python-opencv-cv2-imread-method/#

Loading Images with OpenCV



- Make sure the image is saved in the location!
- Find an image in a JPG format that you would like to load, and try to load it in its original color and gray-scale.

Loading Images with OpenCV

Code

- With an image saved as “seal-black.jpg” saved in the same directory as the program, the program above respectively loads the original image and the gray-scale version of the image to img and gray_img

Displaying Images with OpenCV

- cv2.imshow(*window_name, image*)
  - Method to display an image in a window
- cv2.waitkey()
  - Allows users to display a window for given milliseconds or until any key is pressed.
  - Takes time in milliseconds as a parameter and waits for the given time to destroy the window, if 0 is passed in the argument it waits till any key is pressed.
- cv2.destroyAllWindows()
  - allows users to destroy or close all windows at any time after exiting the script

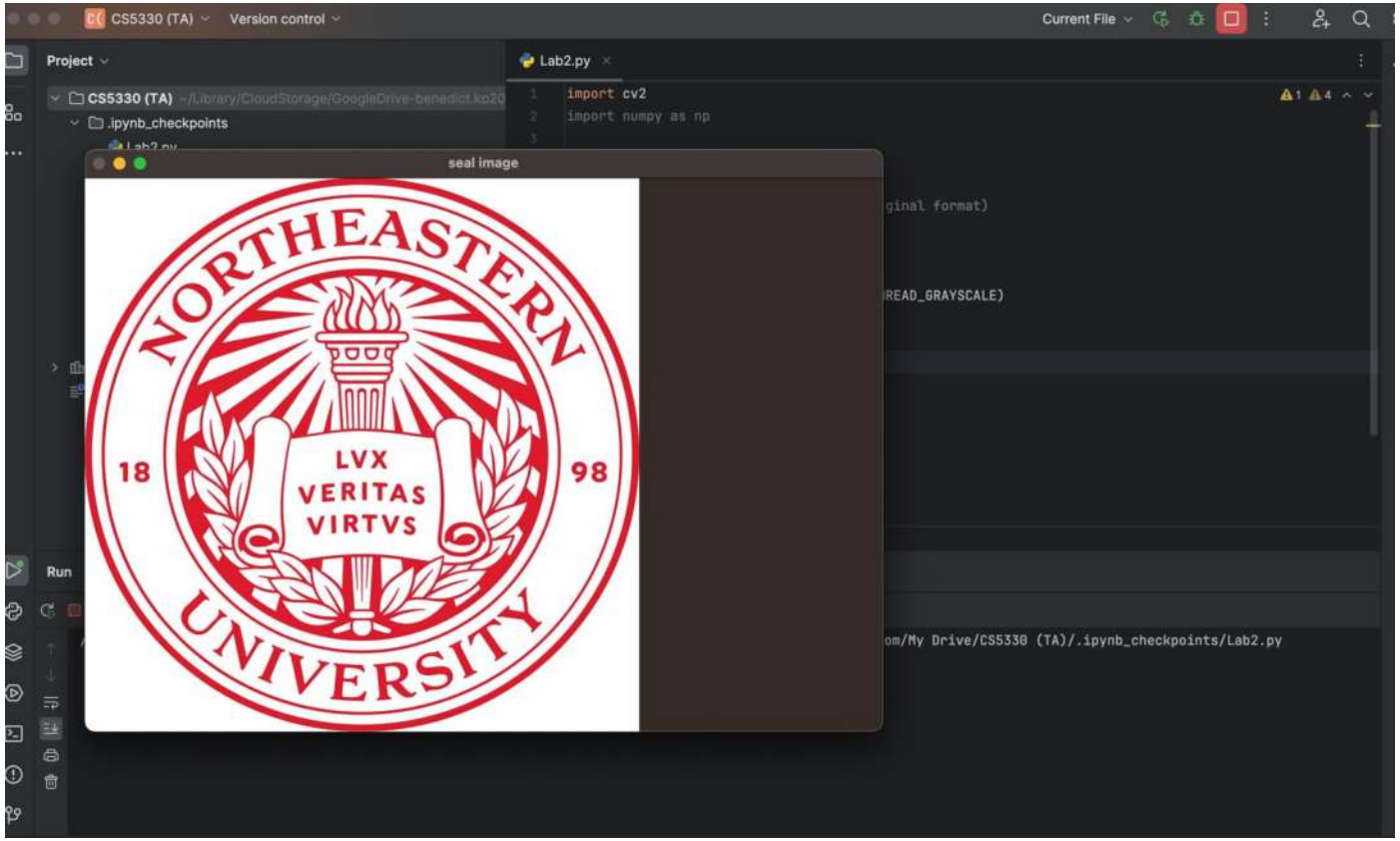
Displaying Images with OpenCV

Code

```python
import cv2
import numpy as np

#Part I: Loading Images

# this loads the image in color (the original format)
img = cv2.imread("seal.jpg")

# this loads the image in grayscale
gray_img = cv2.imread("seal.jpg", cv2.IMREAD_GRAYSCALE)

#Displaying images
cv2.imshow( winname: "seal image", img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

- Use the cv.imshow command to display the image

Displaying Images with OpenCV



- The cv2.waitkey(0) command and cv2.destroyAllImages command will close the pop-up once any key is pressed

Your turn:

- Try displaying a gray scale version of the image that you have loaded

Saving Images with OpenCV

- cv2.imwrite(filename, image)
  - filename: A string representing the file name. **The filename must include image format like .jpg, .png, etc.**
  - image: the image that is to be saved
- cv2.imwrite() supports these image formats and more:
  - JPEG (.jpg, .jpeg)
  - PNG (.png)
  - TIFF (.tiff, .tif)
  - BMP (.bmp)
  - PPM (.ppm)
  - PGM (.pgm)

https://www.geeksforgeeks.org/python-opencv-cv2-imwrite-method/

Saving Images with OpenCV

- You can use cv2.imwrite(*filename*, *image*) to save images
- So if I wanted to save my seal image with a file name “lab_2_image,jpg”, I would use cv2.imwrite(“lab_2_image”, img)

Code

```python
import cv2
import numpy as np

#Part I: Loading Images

# this loads the image in color (the original format)
img = cv2.imread("seal.jpg")

# this loads the image in grayscale
gray_img = cv2.imread("seal.jpg", cv2.IMREAD_GRAYSCALE)

#saving image
cv2.imwrite( filename: "lab_2_image.jpg", img)



#cv2.imshow("gray seal image", gray_img)
```