Image Pyramids

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0.1 Image pyramids

Take a look at how downsampling with image pyramids works.

First, we'll read in an image then construct and display a few layers of an image pyramid.

```
In [1]: import numpy as np
        import matplotlib.pyplot as plt
        import cv2

        %matplotlib inline

        # Read in the image
        image = cv2.imread('images/rainbow_flag.jpg')

        # Change color to RGB (from BGR)
        image = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)

        plt.imshow(image)

Out[1]: <matplotlib.image.AxesImage at 0x7f592d29c0f0>
```
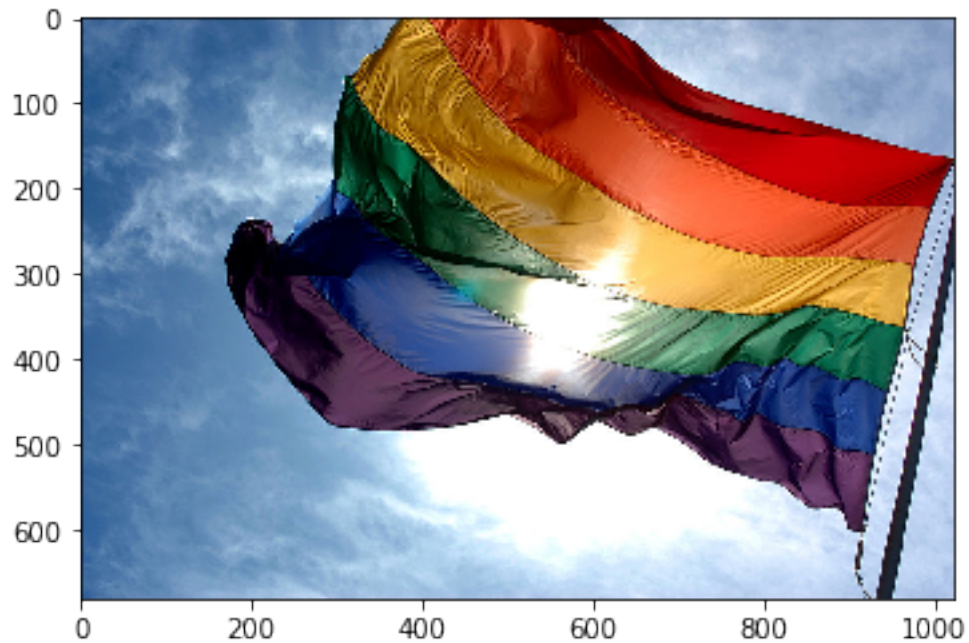
```
In [2]: level_1 = cv2.pyrDown(image)
        level_2 = cv2.pyrDown(level_1)
        level_3 = cv2.pyrDown(level_2)

        # Display the images
        f, (ax1,ax2,ax3,ax4) = plt.subplots(1, 4, figsize=(20,10))

        ax1.set_title('original')
        ax1.imshow(image)

        ax2.imshow(level_1)
        ax2.set_xlim([0, image.shape[1]])
        ax2.set_ylim([image.shape[0], 0])

        ax3.imshow(level_2)
        ax3.set_xlim([0, image.shape[1]])
        ax3.set_ylim([image.shape[0], 0])

        ax4.imshow(level_3)
        ax4.set_xlim([0, image.shape[1]])
        ax4.set_ylim([image.shape[0], 0])

Out[2]: (681, 0)
```
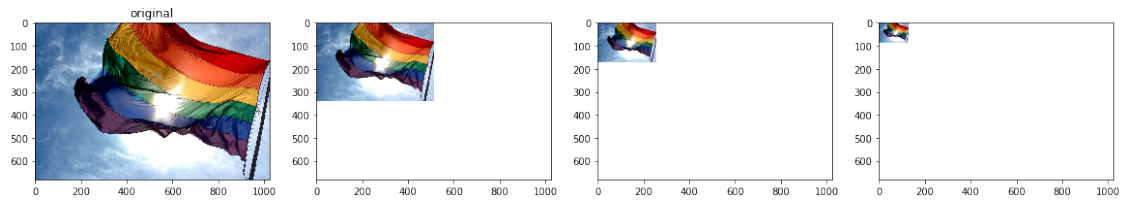
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