A0 - Introduction: Playing with Pictures

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I. My Image

Fig. 1. Original image. Replace this text with your own.

Exposure	Aperture	ISO
1/60s	f1.8	250

II. Filter Information

I applied gaussian filter to the image. The image expect to be blur.

1	4	7	4	1
4	16	26	16	4
7	26	41	26	7
4	16	26	16	4
1	4	7	4	1

III. Convolution Results

Manual convolve and cv2 concolve produce the same results

They are the same. They have same dimensions. The pixel at (100, 100) are both [167 190 205]. The pixel at (500, 500) are both [148 168 179].

Fig. 2. convolveManual. Image with gaussian filter.

IV. Discussion of Results: Reflection

I notice that my convolution function takes much longer time to process an image than the cv2 convolution takes. If I can do it again, I want to improve the efficiency of my program.

References

[1] numpy.pad - API reference, https://numpy.org/doc/stable/reference/generated/numpy.pad.html, numpy.pad, Feb. 1.
[2] Smoothing Images - OpenCV, https://docs.opencv.org/master/d4/d13/tutorial_py_filtering.html, Smoothing Images, Feb. 1

Fig. 3. convolveCV2. Image with gaussian filter.