

Re: Generating a random matrix through a natural image

Source: <http://sci.tech-archive.net/Archive/sci.image.processing/2008-08/msg00094.html>

- *From:* Dev <gunadp@xxxxxxxx>
 - *Date:* Wed, 20 Aug 2008 16:31:07 -0700 (PDT)
-

On Aug 21, 3:14 am, aruzinsky <aruzin...@xxxxxxxxxxxxxxxxxxxxxxxx> wrote:

On Aug 20, 2:31 am, Dev <gun...@xxxxxxxx> wrote:

On Aug 20, 1:32 pm, Edward Rosten <Edward.Ros...@xxxxxxxx> wrote:

On Aug 19, 3:05 am, Dev <gun...@xxxxxxxx> wrote:

Hi All,

I want to create a random valued matrix from a natural image matrix.. For example, if we take the lena image 256x256, the pixel values in the matrix 256x256 should be arranged in such a way that the values are not related to each other. Basically, I should have the same histogram from the two matrices, but I want to remove dependencies between pixels in a natural image. I used the `algintrlv` method in matlab,

Re: Generating a random matrix through a natural image

```
image_file = imread('E:\TestData\lena.jpg');  
im1 =  
algintrlv(image_file,128,'takeshita-costello',125,126);
```

try

```
im1 = zeros(size(image_file));  
im1(:) = randperm(image_file(:));
```

-Ed

--

(You can't go wrong with
psycho-rats.)(<http://mi.eng.cam.ac.uk/~er258>)

```
/d{def}def/f{/Times s selectfont}d/s{11}d/r{roll}d f  
2/m{moveto}d -1  
r 230 350 m 0 1 179{ 1 index show 88 rotate 4 mul 0  
rmoveto}for/s 12  
d f pop 235 420 translate 0 0 moveto 1 2 scale show  
showpage
```

Thanks for all the replies. I tried the ones sent by Thomas and Edward, but came up with problems. For aruzinsky's method, can you pls send me the algorithm, so that I can try it out? Meanwhile I tried a dewhitening method, though it takes away the correlations, it doesn't give the same histogram. Any further help is greatly appreciated.

Thanks,

Dev- Hide quoted text -

- Show quoted text -

I believe illywhacker is correct, you can't get rid of correlations by

Re: Generating a random matrix through a natural image

permuting the pixels. However, I suspect that, for a 256x256 image, the correlations are sufficiently close to zero for most or all practical intents and purposes.

You take any sorting algorithm and modify it to operate on two arrays, array1 and array2. Comparisons are made only on the elements of array1, whereas element movements are made on both arrays. Thus, "array2 is sorted with respect to values in array1." Alternatively, you can modify a sorting algorithm to sort an array2 of indices without sorting array1. – Hide quoted text –

– Show quoted text –

Just to clarify my intention, I am testing an algorithm from deconvolution. The algorithm works perfectly for a random image, but not for a natural image like lena. So I want to test whether there's any effect on correlation of pixels to my algorithm. For that I need to take away the correlation between pixels in the lena image, but keep the same histogram, so that the values are same.

.