



How to ruin pics in a very
complex and unesesary way

(Haarwavelet)

Code

compression

```
13 def Converttoarray(x):
14     array=sm.imread(x , True)
15     if array.shape[0]%2==1:
16         array=array[:-1,:]
17     if array.shape[1]%2==1:
18         array=array[:, :-1]
19     elif array.shape[1]%2==1:
20         array=array[:, :-1]
21     return array

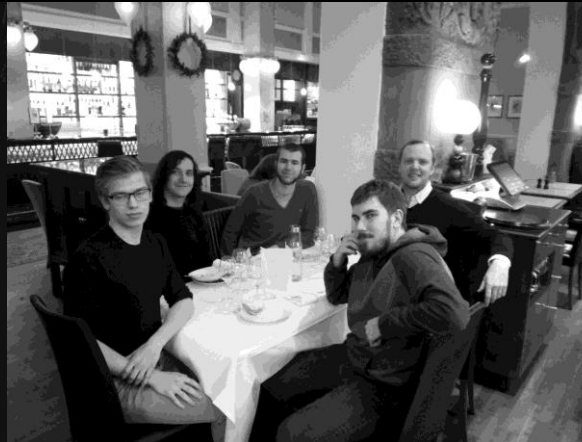
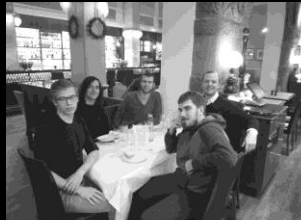
23 def HaarWavelet(array):
24     haararray=np.zeros((array.shape[0],array.shape[0]))
25     for i in range(haararray.shape[0]):
26         haararray[i//2,i]=sqrt(2)/2
27         haararray[-i//2-1,-i-1]=-sqrt(2)/2
28     for i in range(haararray.shape[0]//2):
29         haararray[-i-1,-2*i-1]=sqrt(2)/2
30     b=dot(haararray,array)
31     haararray1=np.zeros((array.shape[1],array.shape[1]))
32     for i in range(haararray1.shape[1]):
33         haararray1[i//2,i]=sqrt(2)/2
34         haararray1[-i//2-1,-i-1]=-sqrt(2)/2
35     for i in range(haararray1.shape[1]//2):
36         haararray1[-i-1,-2*i-1]=sqrt(2)/2
37     t=np.transpose(haararray1)
38     e=dot(b,t)
39     sm.imsave('AAA.jpg',e)
40     aa=e[:e.shape[0]//2,:e.shape[1]//2]
41     sm.imsave('aa.jpg',aa)
42     ab=e[:e.shape[0]//2,e.shape[1]//2:]
43     sm.imsave('ab.jpg',ab)
44     ac=e[e.shape[0]//2,:e.shape[1]//2]
45     sm.imsave('ac.jpg',ac)
46     ad=e[e.shape[0]//2,e.shape[1]//2:]
47     sm.imsave('ad.jpg',ad)
48     return e
```

```
50 def Revert(array):
51     haararray=np.zeros((array.shape[0],array.shape[0]))
52     for i in range(haararray.shape[0]):
53         haararray[i//2,i]=sqrt(2)/2
54         haararray[-i//2-1,-i-1]=-sqrt(2)/2
55     for i in range(haararray.shape[0]//2):
56         haararray[-i-1,-2*i-1]=sqrt(2)/2
57     haararray1=np.zeros((array.shape[1],array.shape[1]))
58     for i in range(haararray1.shape[1]):
59         haararray1[i//2,i]=sqrt(2)/2
60         haararray1[-i//2-1,-i-1]=-sqrt(2)/2
61     for i in range(haararray1.shape[1]//2):
62         haararray1[-i-1,-2*i-1]=sqrt(2)/2
63     f=dot(np.transpose(haararray),dot(array,haararray1))
64     sm.imsave('AAC.jpg',f)
65     return print('hi')
66
67 def HaarIterate(array,t=1):
68     for i in range(t):
69         HaarWavelet(array)
70         array=Converttoarray('aa.jpg')
71     ab=Converttoarray('ab.jpg')
72     ac=Converttoarray('ac.jpg')
73     ad=Converttoarray('ad.jpg')
74     m=column_stack((array,ab))
75     n=column_stack((ac,ad))
76     mn=vstack((m,n))
77     return mn
```

Code

- Without

```
78
79 def Nomatrixcompress(array):
80     Non=zeros((array.shape[0],array.shape[1]))
81     for n in range((array.shape[0]//2-1):
82         for m in range((array.shape[1]//2-1):
83             Non[n,m]=(array[n*2,m*2]+array[n*2,2*m+1]+array[2*n+1,2*m]+array[2*n+1,2*m+1])/4
84             Non[n,array.shape[1]//2+m]=(-(array[2*n,2*m])+array[2*n,2*m+1]-array[2*n+1,2*m]+array[2*n+1,2*m+1])/4
85             Non[array.shape[0]//2+n,m]=(-(array[2*n,2*m])-array[2*n,2*m+1]+array[2*n+1,2*m]+array[2*n+1,2*m+1])/4
86             Non[array.shape[0]//2+n,array.shape[1]//2+m]=(-array[2*n,2*m]+array[2*n,2*m+1]+array[2*n+1,2*m]-array[2*n+1,2*m+1])/4
87     sm.imwrite('AA#.jpg',Non)
88     Non=Non[:,Non.shape[0]//2,:Non.shape[1]//2]
89     sm.imwrite('AA#2.jpg',Non)
90
```



Original picture

40.1 KB

Compressed

19 KB

Cutaway

12 KB

Reverse

37 KB

Group

764 KB

Compressed

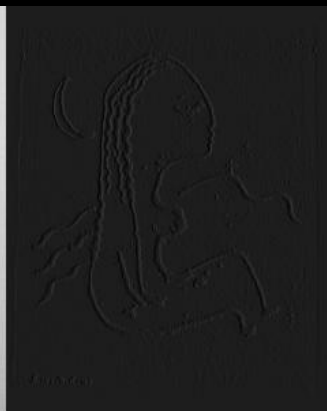
356 KB

Cutaway

225 KB

Reverse

4.12 MB





Original picture

40.1 KB

Compressed 2x

6.95 KB

Cutaway

3.98 KB

Reverse

30.9 KB

Group

764 KB

Compressed

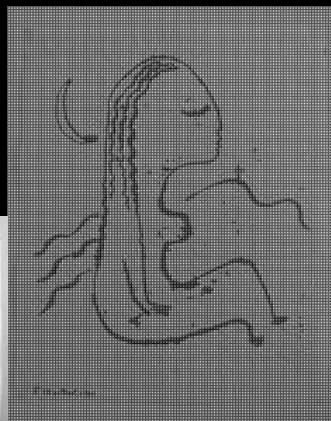
122 KB

Cutaway

79.6 KB

Reverse

1.08 MB



Comp 3x



Compressed 3x

2.67 KB

Cutaway

1.47 KB

Reverse

8.12 KB

Group

764 KB

Compressed

45.6 KB

Cutaway

29 KB

Reverse

300 KB

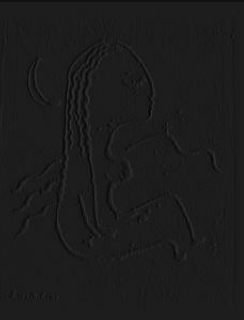
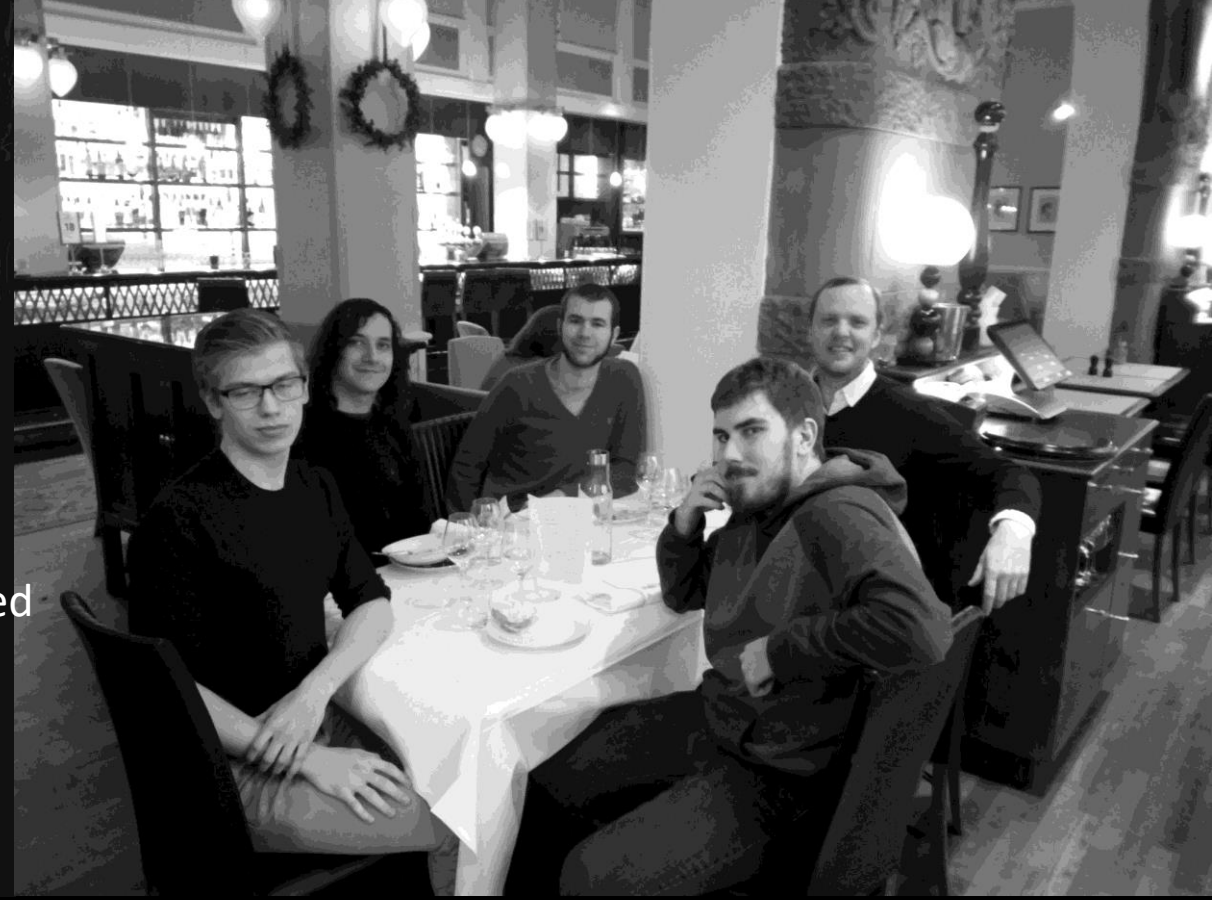




Comp without matrix

Compressed 1x
19.2 KB
Cutaway
12 KB

Group
Compressed
359 KB
Cutaway
225 KB



Without 2x

Kvinna
Compressed
6.95 KB
Cutaway
3.98 KB



Group
Compressed
123 KB
Cutaway
79.4 KB



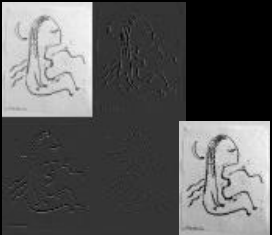
Without 3x



Kvinna
Compressed
2.43 KB
Cutaway
1.47 KB



Group
Compressed
45.9 KB
Cutaway
29.0 KB



Time

- Difference
- Matrix
- Without Matrix



Method

- Mostly in group
- Divided the work

Demonstration time!!!!!!!!!!!!!!