十二周课外作业

1. 源代码

1.

import numpy as np

c = np.array([[1,2,3]],np.int32)

d = c.transpose()

print(d)

from numpy.linalg import inv

e = np.array([[1,0.5,5],[2.3,2,3],[4,1,1.7]])

print(e)

al = inv(e)

print(al)

m = np.matmul(al,d)

print(m)

2.

from PIL import Image

import numpy as np

vec\_el = np.pi/2.2

vec\_az = np.pi/4.

depth = 10.

im = Image.open('psb.jpg4.jpg').convert('L')

a = np.asarray(im).astype('float')

grad = np.gradient(a)

grad\_x, grad\_y = grad

grad\_x = grad\_x\*depth/100.

grad\_y = grad\_y\*depth/100.

dx = np.cos(vec\_el)\*np.cos(vec\_az)

dy = np.cos(vec\_el)\*np.sin(vec\_az)

dz = np.sin(vec\_el)

A = np.sqrt(grad\_x\*\*2 + grad\_y\*\*2 + 1.)

uni\_x = grad\_x/A

uni\_y = grad\_y/A

uni\_z = 1./A

a2 = 255\*(dx\*uni\_x + dy\*uni\_y + dz\*uni\_z)

a2 = a2.clip(0,255)

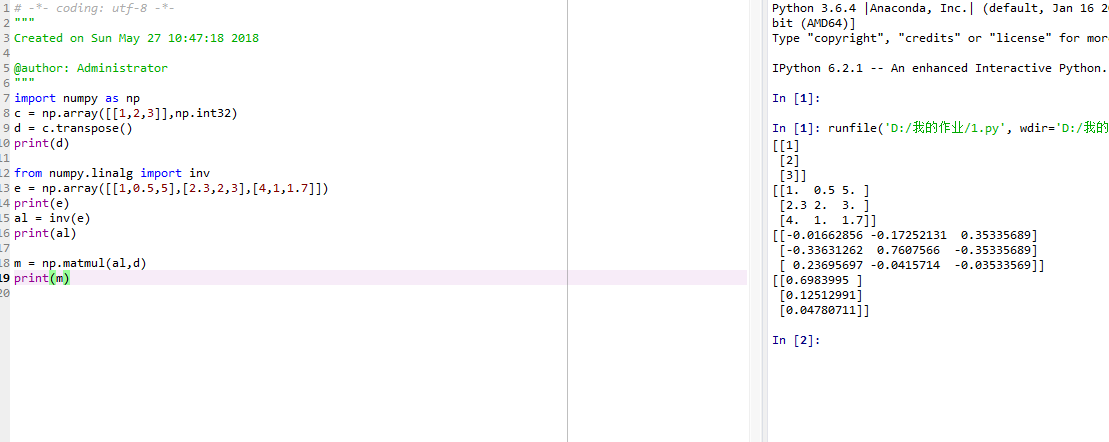
im2 = Image.fromarray(a2.astype('uint8'))

im2.save('psb.jpg4.jpg')

im2.show()

1. 运行情况

1.



2.

