

Computer Vision Hw3 Report

Histogram Equalization

First calculate the frequency of each pixel (0~255). Then calculate s_k according to the equation provided in the ppt. Finally, change every pixel from k to s_k . The implementation is as below.



```
sk = {}
for i in range(512):
    for j in range(512):
        if lena_img[i][j] not in sk:
            sk[lena_img[i][j]] = 1
        else:
            sk[lena_img[i][j]] += 1
```

```
sck = {}
for i in range(256):
    if i not in sck:
        sck[i] = 0
    for j in range(i+1):
        if j not in sk:
            continue
        sck[i] += sk[j]
    sck[i] = int(255 * (sck[i] / (512*512)))
```