

# Computer and Robot Vision Homework 3

## 資工碩一 張家源 r07922102

使用語言：Python

### Histogram Equalization

先計算histogram的累積分佈函數(尚未除以number of pixels)

```
cdf = np.zeros(256)
cdf[0] = hist[0]
count = 0
for i in range(1,256):
    cdf[i] += cdf[i-1]+hist[i]
```

根據公式  $s_k = 255 \sum_{j=0}^k \frac{n_j}{n}$  更新每個Pixel

```
hist = np.zeros(256)
for i in range(img.shape[0]):
    for j in range(img.shape[1]):
        img[i][j] = 255*cdf[img[i][j]]/(img.shape[0]*img.shape[1])
        hist[img[i][j]] += 1
```

最後得到的Histogram

