Homework Report for Computer Vision

Yu Xiang, Luo

October 14, 2023

You can check this github for more information

(a) Dilation

Find the maximum value of pixel in kernel space and place it to the return image, since the large the value is, the lighter the pixel is.

```
for pixel in kernel space:
    return_pixel = max(return_pixel, pixel)
putpixel((x, y), return_pixel) // put pixel to the center of the kernel
```

(b) erotion

Find the minimum value of pixel in kernel space and place it to the return image, since the smaller the value is, the darker the pixel is.

```
for pixel in kernel space:
    return_pixel = min(return_pixel, pixel)
putpixel((x, y), return_pixel) // put pixel to the center of the kernel
```

(c) opening & closing

Combination of dilation and erosion.

(a) opening

(b) closing

```
opening(image) = dilation(erosion(image))
closing(image) = erosion(dilation(image))
```