

## EEP 596 Computer Vision HW2

### 1. Floodfill

image name "floodfille.jpg" → should be "floodfill.jpg"

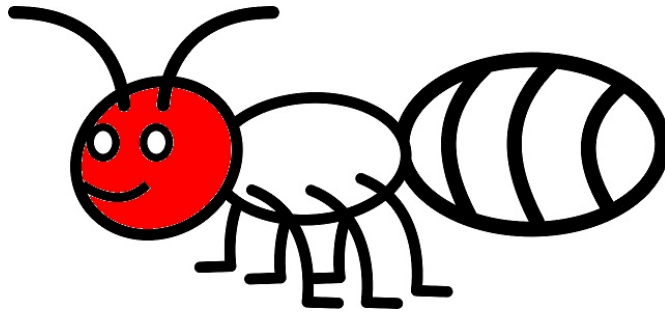


Fig. 1. floodfill

### 2. Convolution for Gaussian smoothing



Fig. 2. gaussian\_blur\_0



Fig. 3. gaussian\_blur\_1



Fig. 4. gaussian\_blur\_2



Fig. 5. gaussian\_blur\_3



Fig. 6. gaussian\_blur\_4

### 3. Convolution for differentiation along the vertical direction

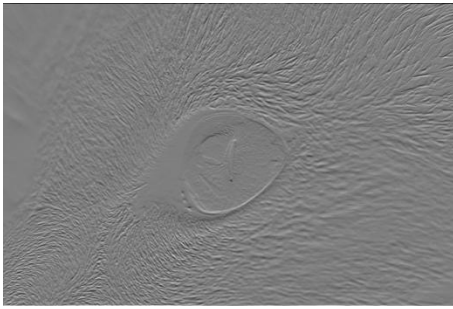


Fig. 7. vertical\_0

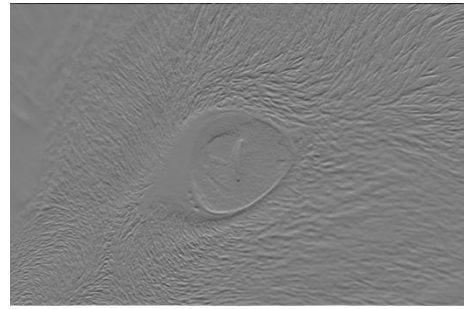


Fig. 8. vertical\_1

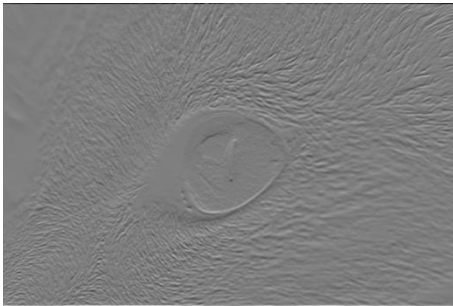


Fig. 9. vertical\_2

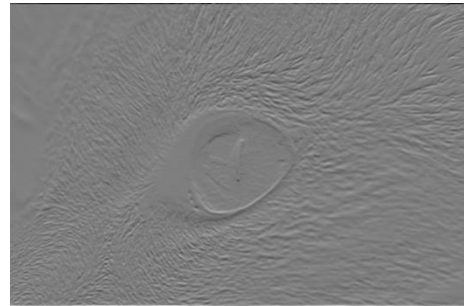


Fig. 10. vertical\_3

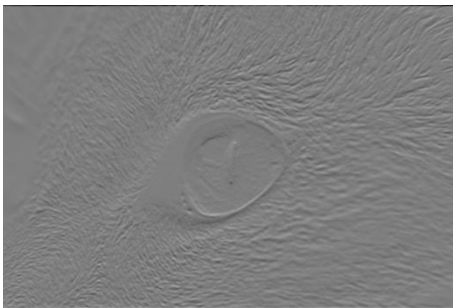


Fig. 11. vertical\_4

### 4. Differentiation along another direction along the horizontal direction

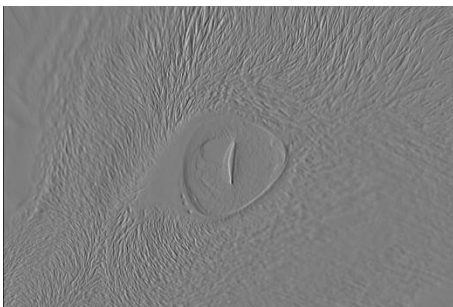


Fig. 12. horizontal\_0

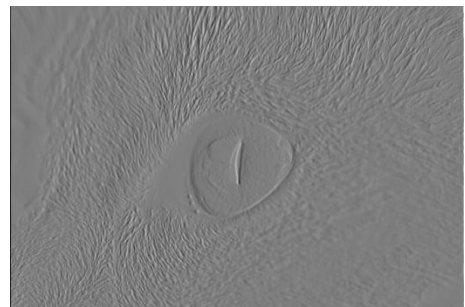


Fig. 13. horizontal\_1



Fig. 14. horizontal\_2

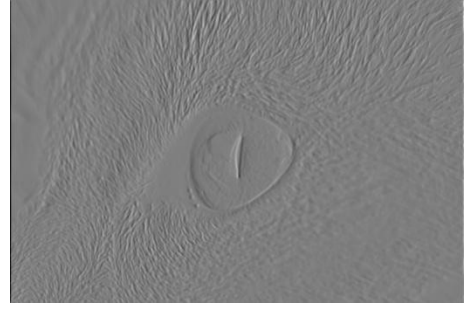


Fig. 15. horizontal\_3



Fig. 16. horizontal\_4

## 5. Gradient magnitude

gradient\_magnitute() → should be gradient\_magnitude()

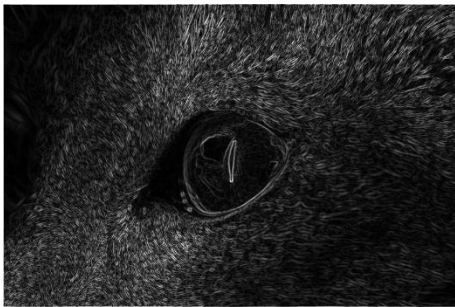


Fig. 17. gradient\_0

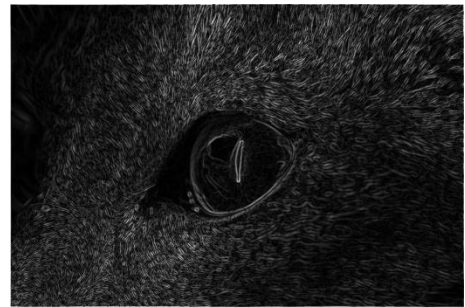


Fig. 18. gradient\_1

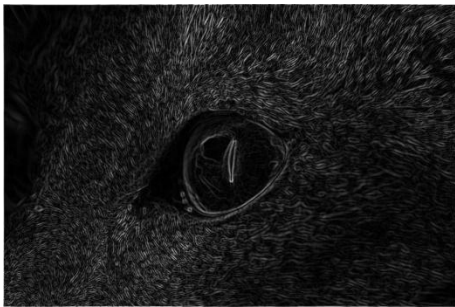


Fig. 19. gradient\_2

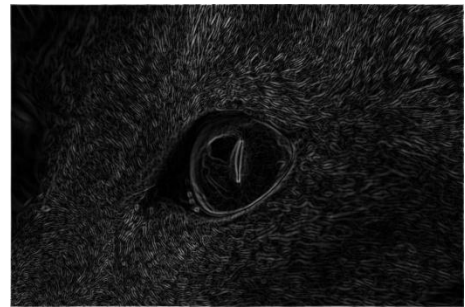


Fig. 20. gradient\_3

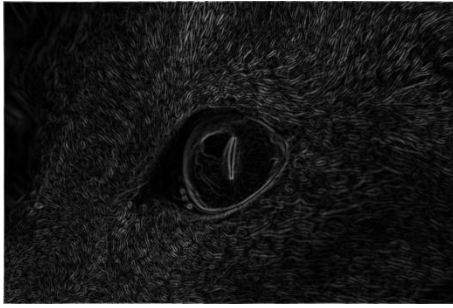


Fig. 21. gradient\_4

## 6. Built-in convolution

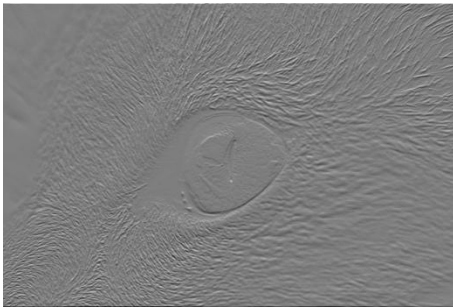


Fig. 22. scipy\_smooth\_0

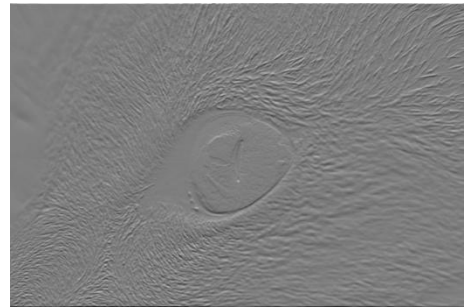


Fig. 23. scipy\_smooth\_1

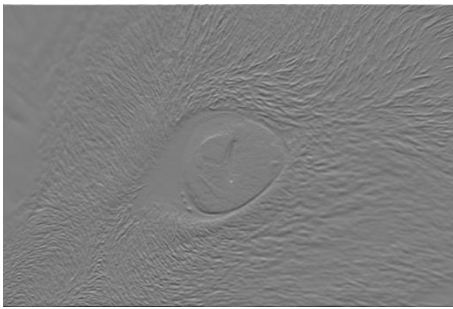


Fig. 24. scipy\_smooth\_2

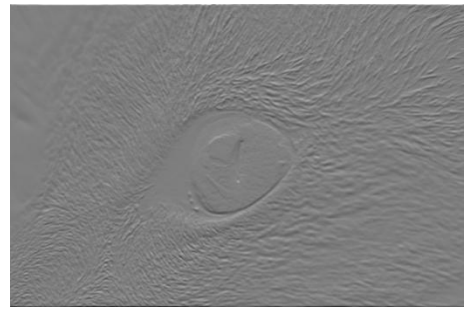


Fig. 25. scipy\_smooth\_3

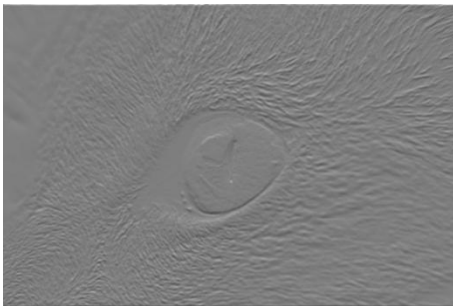


Fig. 26. scipy\_smooth\_4

## 7. Repeated box filtering.

