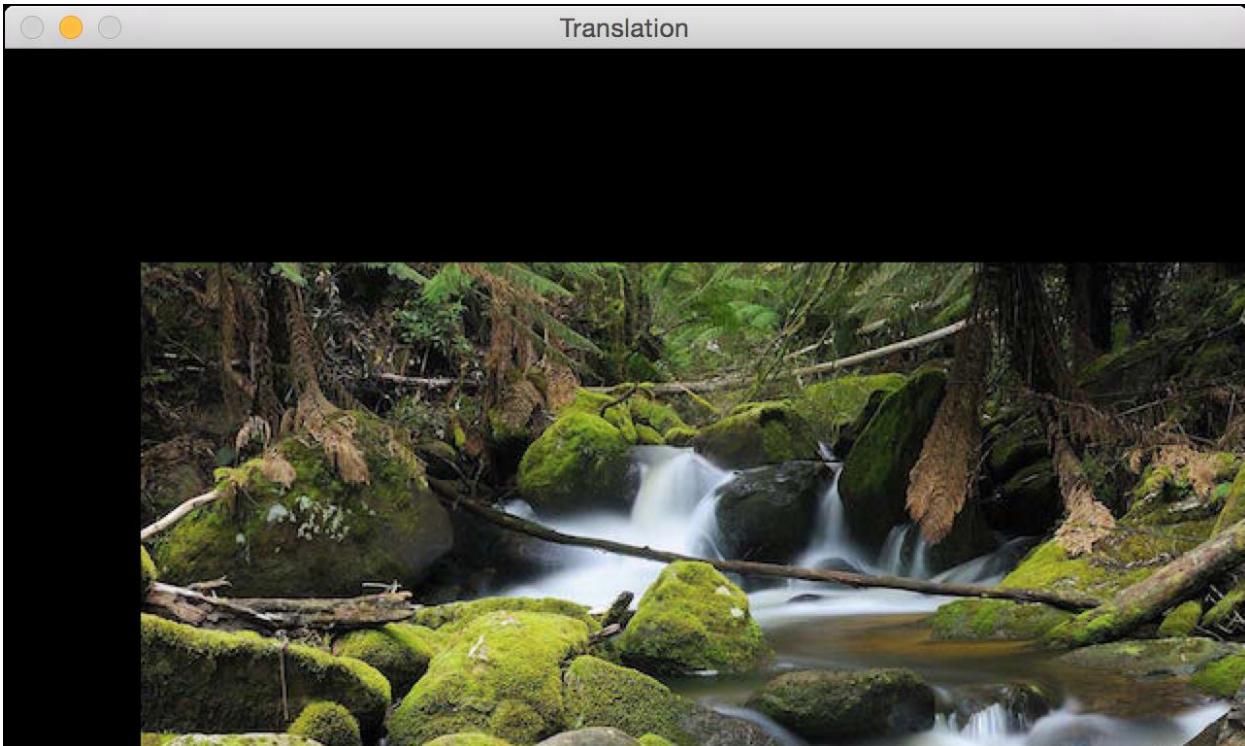
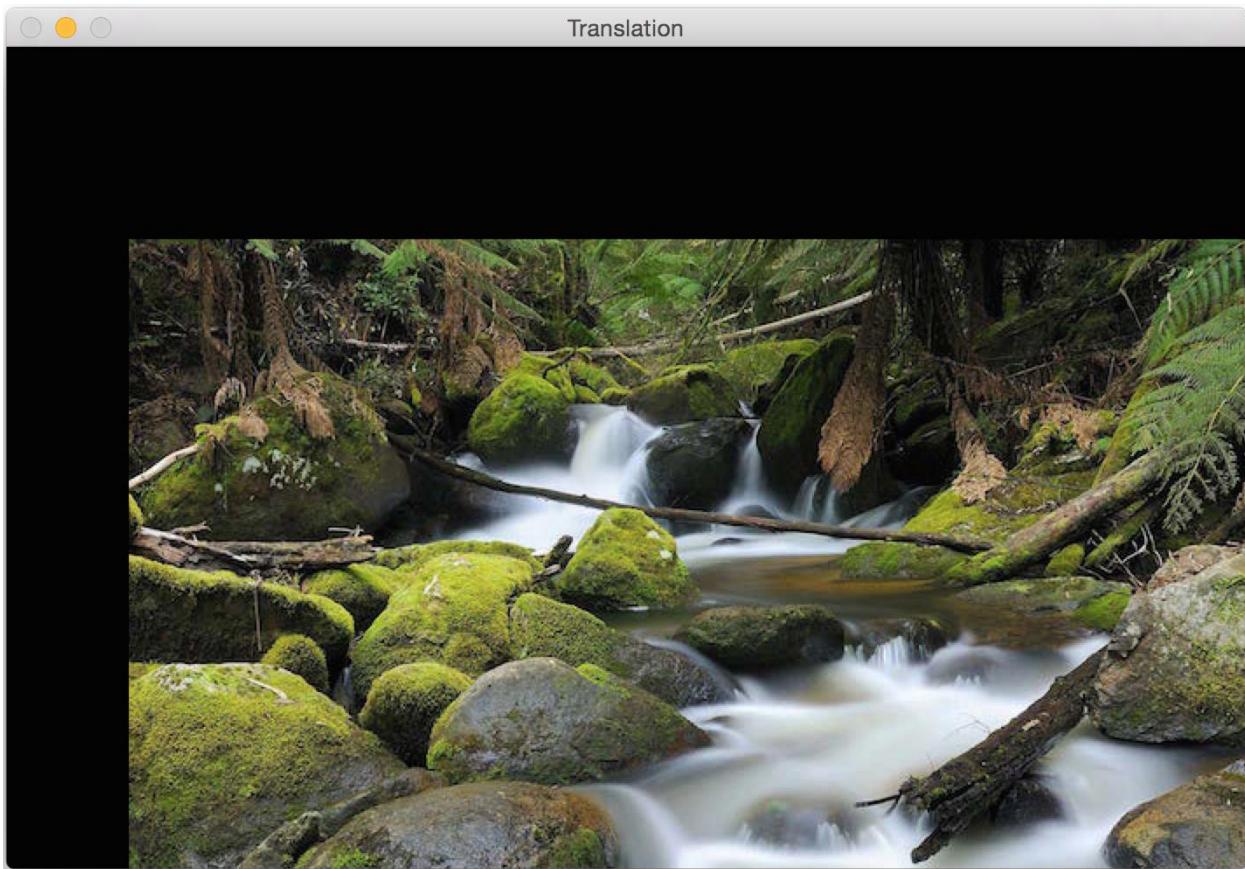


# Chapter 1





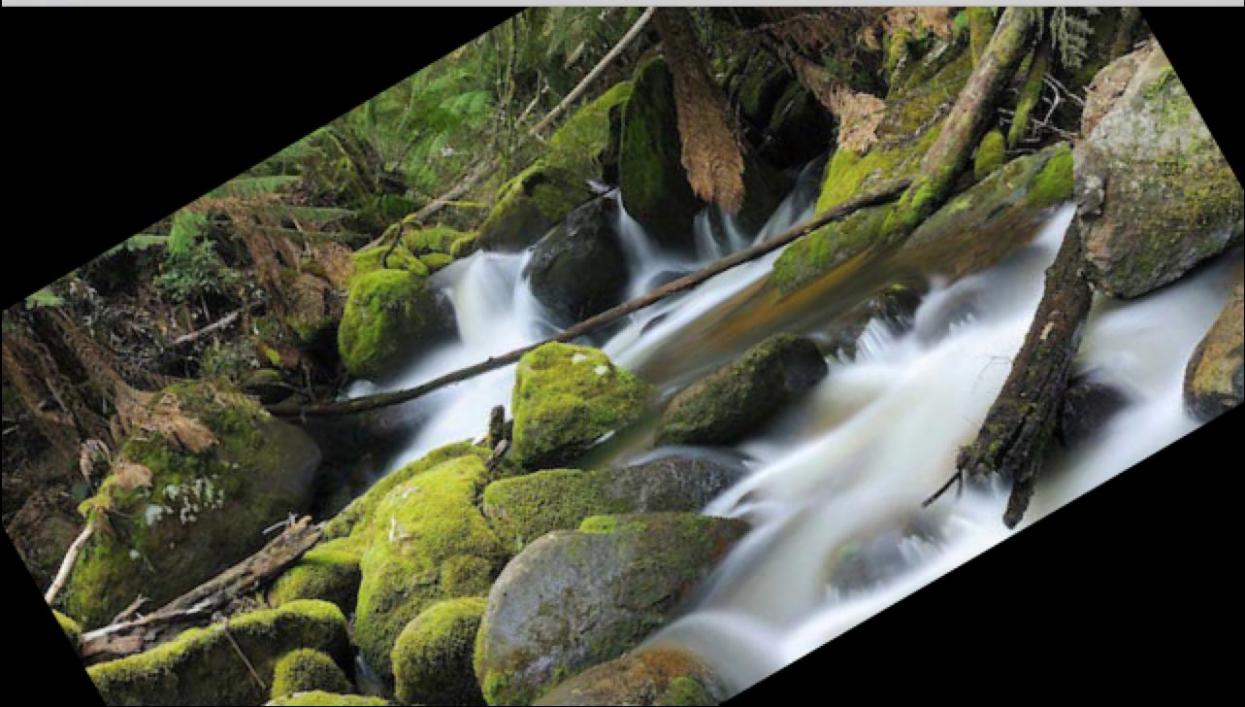
$$T = \begin{bmatrix} 1 & 0 & t_x \\ 0 & 1 & t_y \end{bmatrix}$$



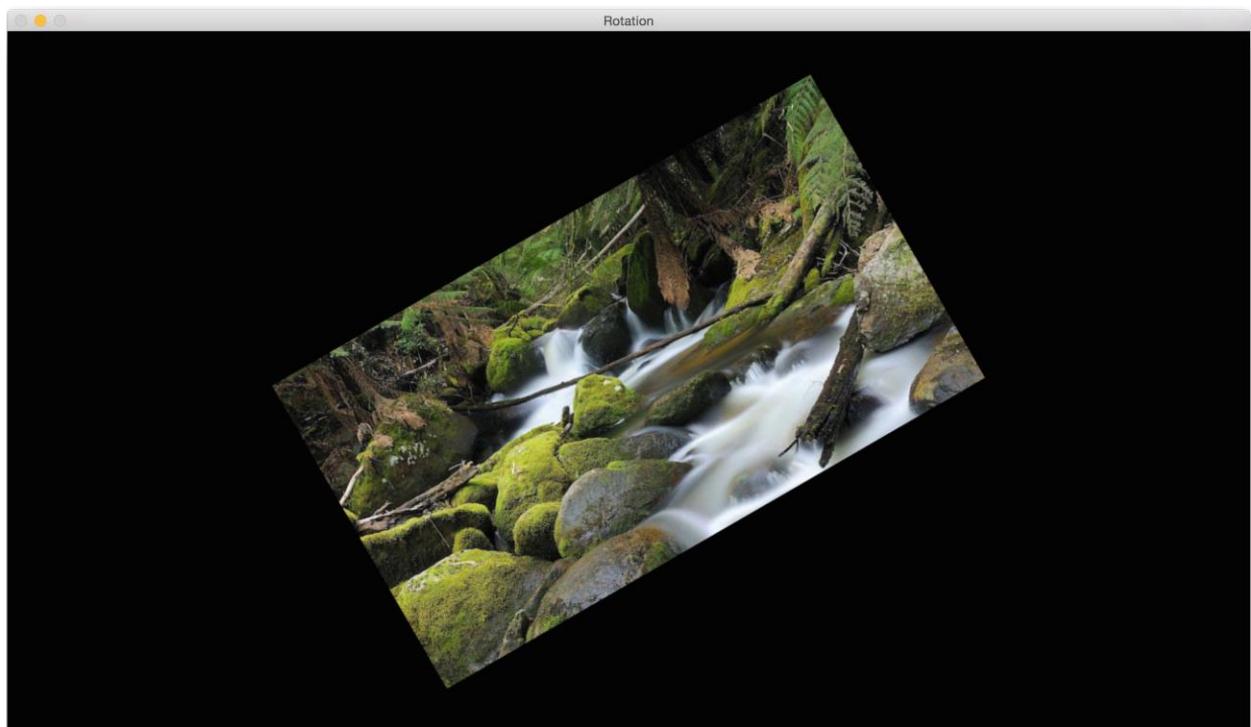
Translation



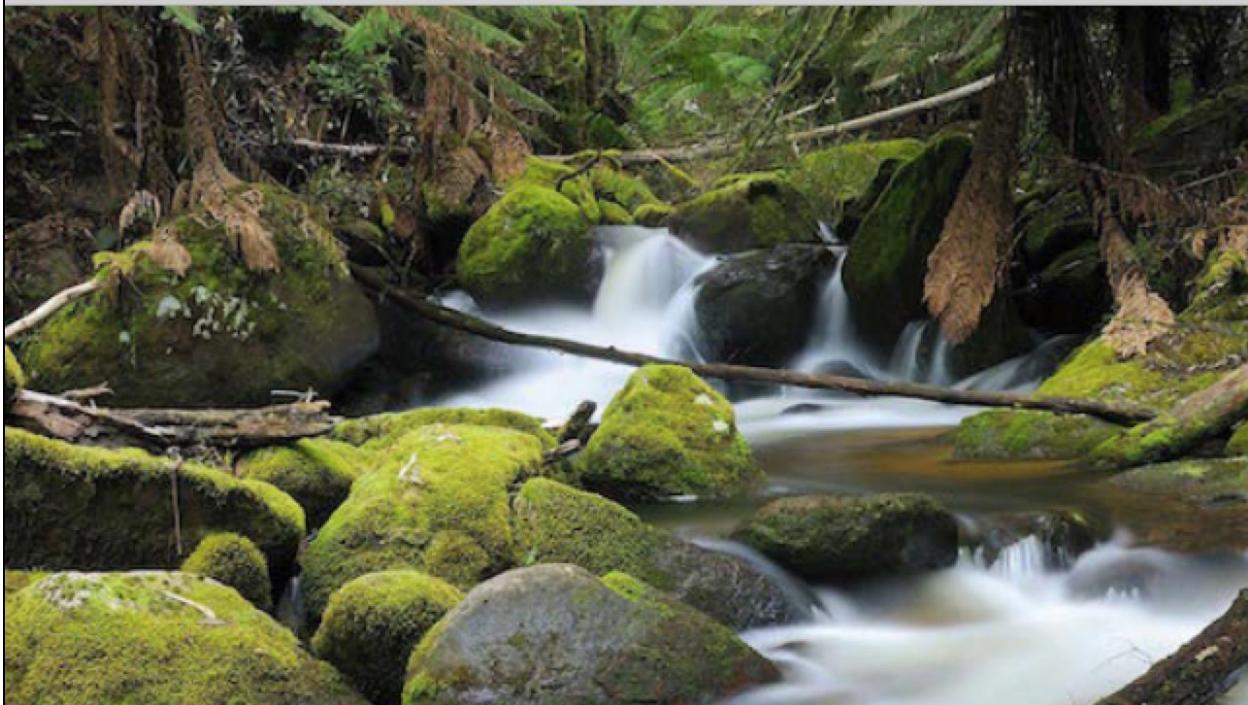
Rotation



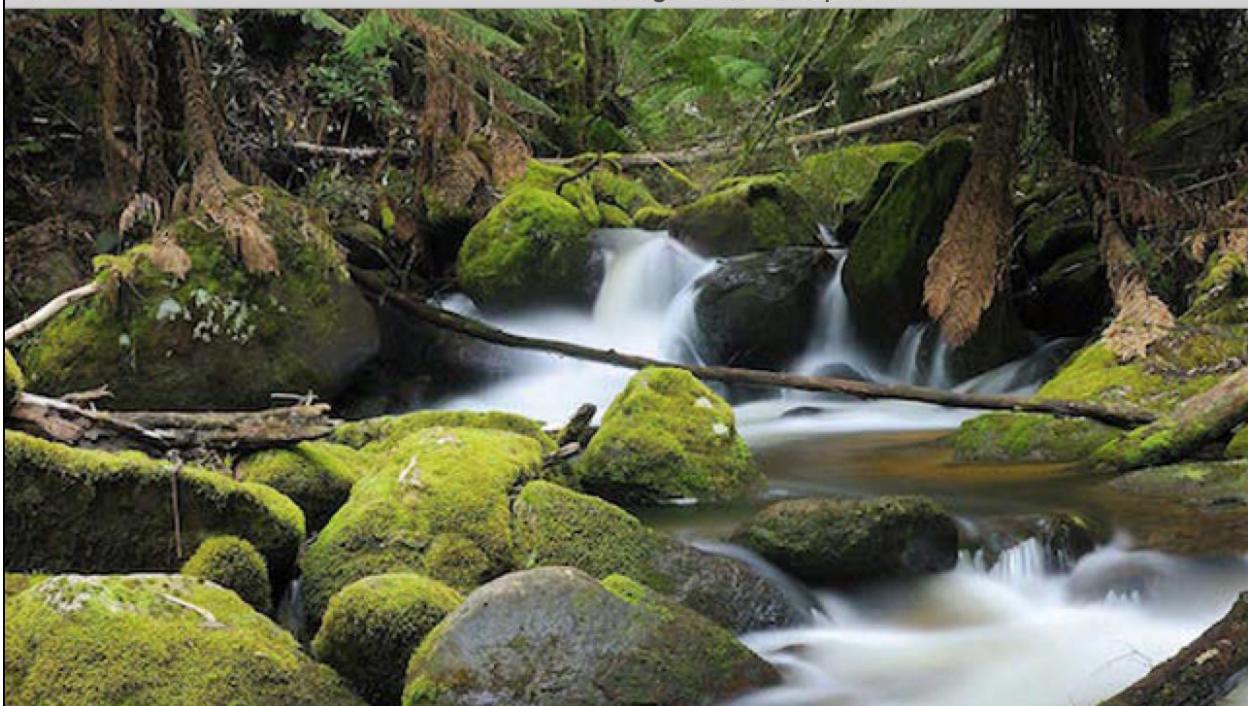
$$R = \begin{bmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{bmatrix}$$

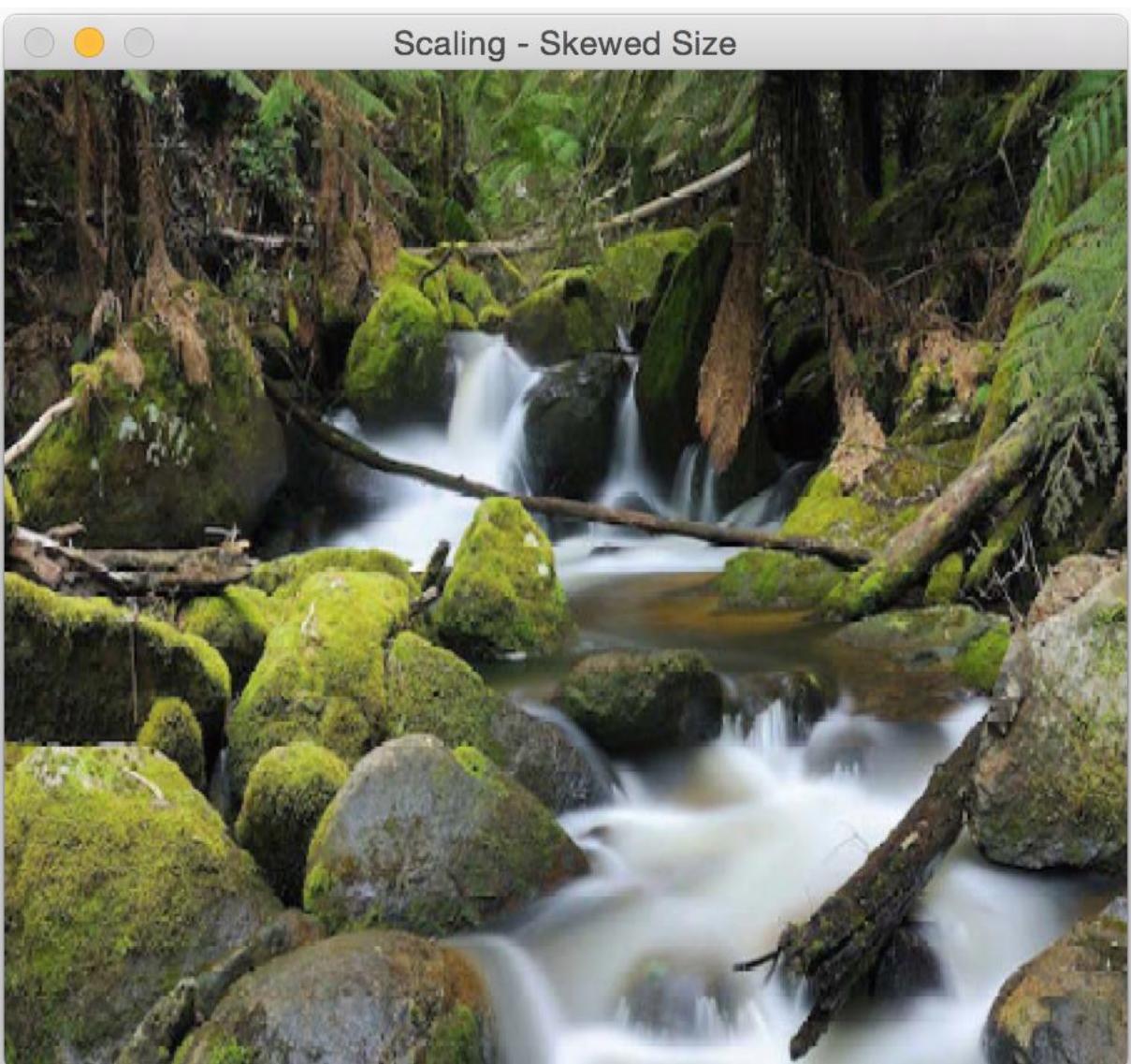


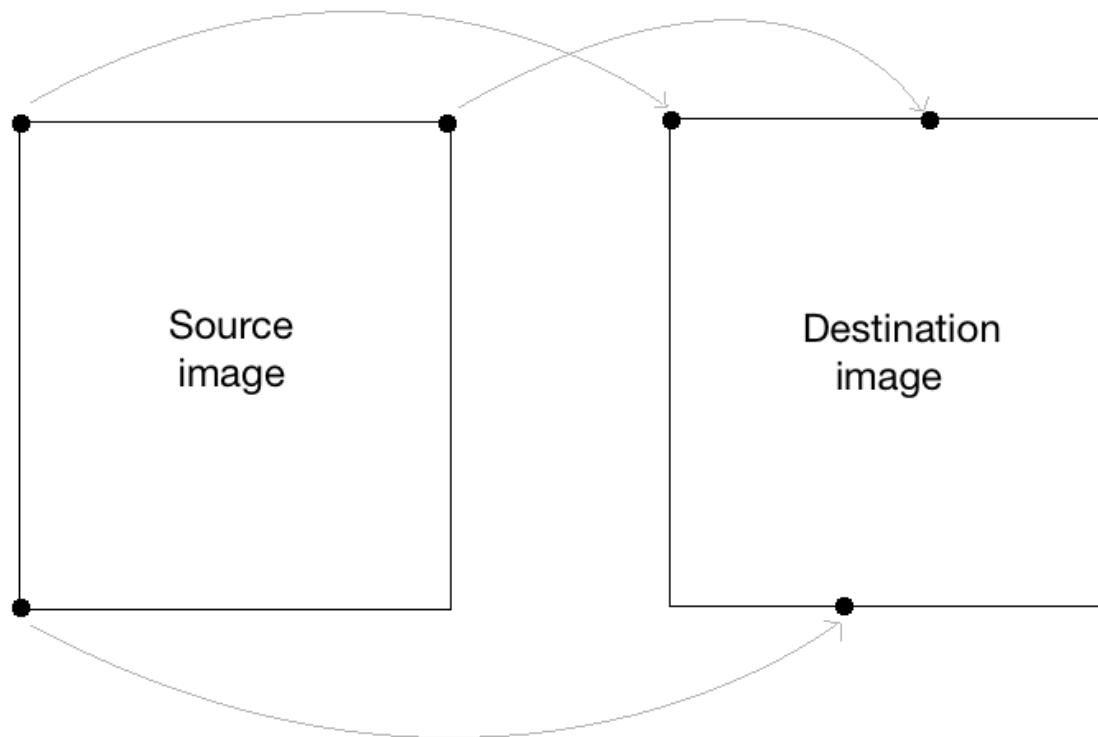
Scaling - Linear Interpolation



Scaling - Cubic Interpolation

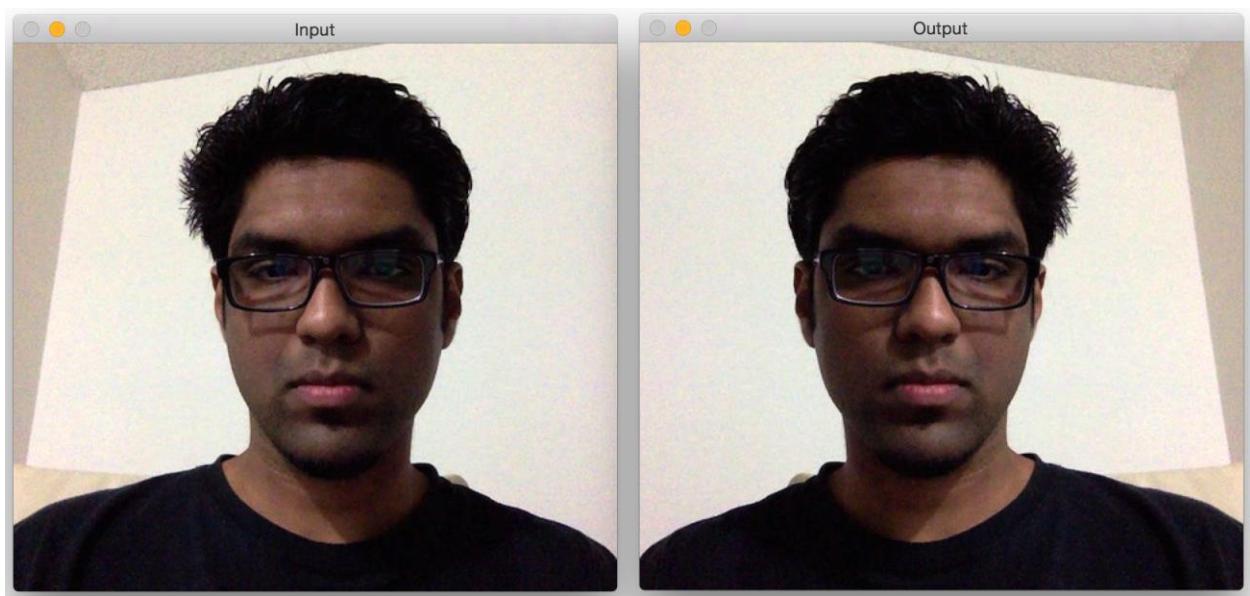
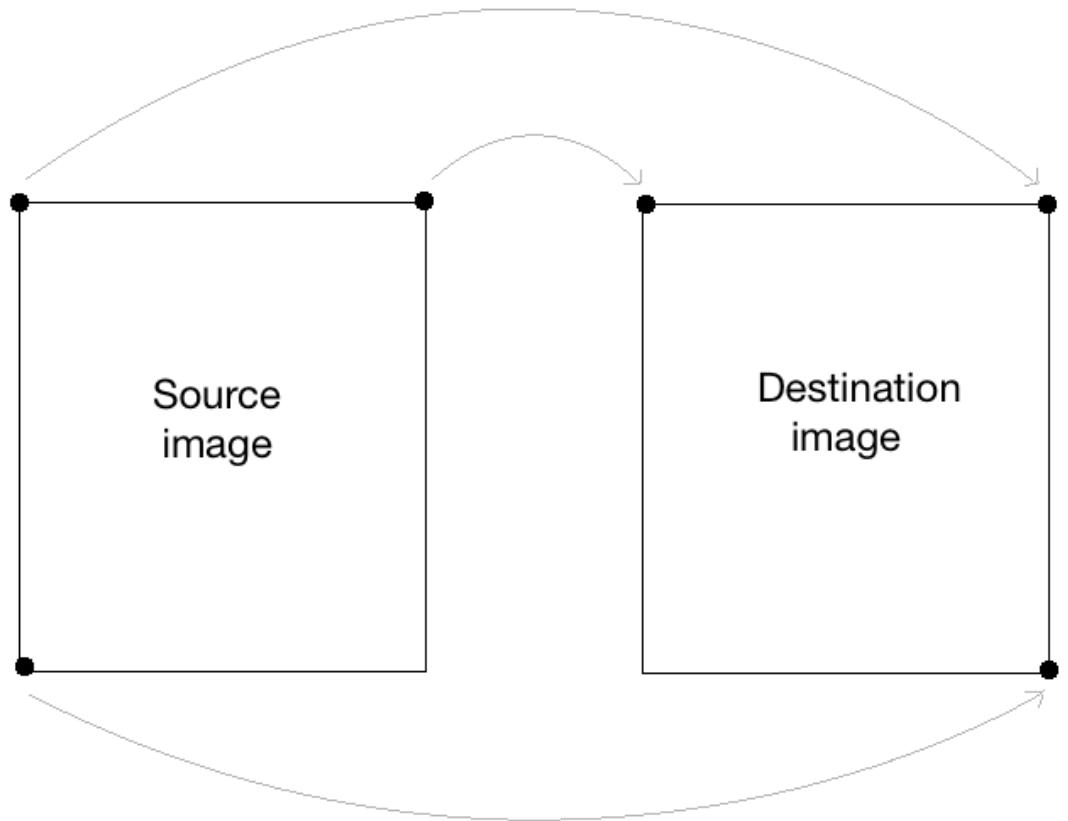








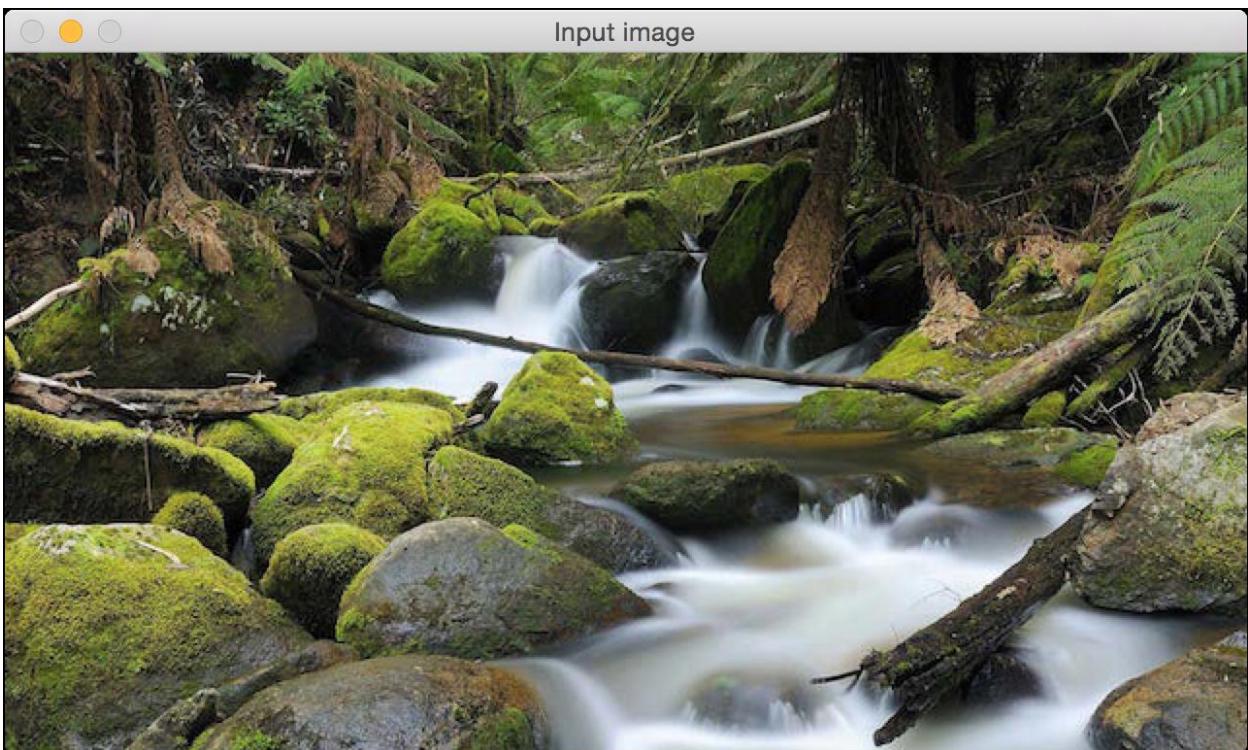


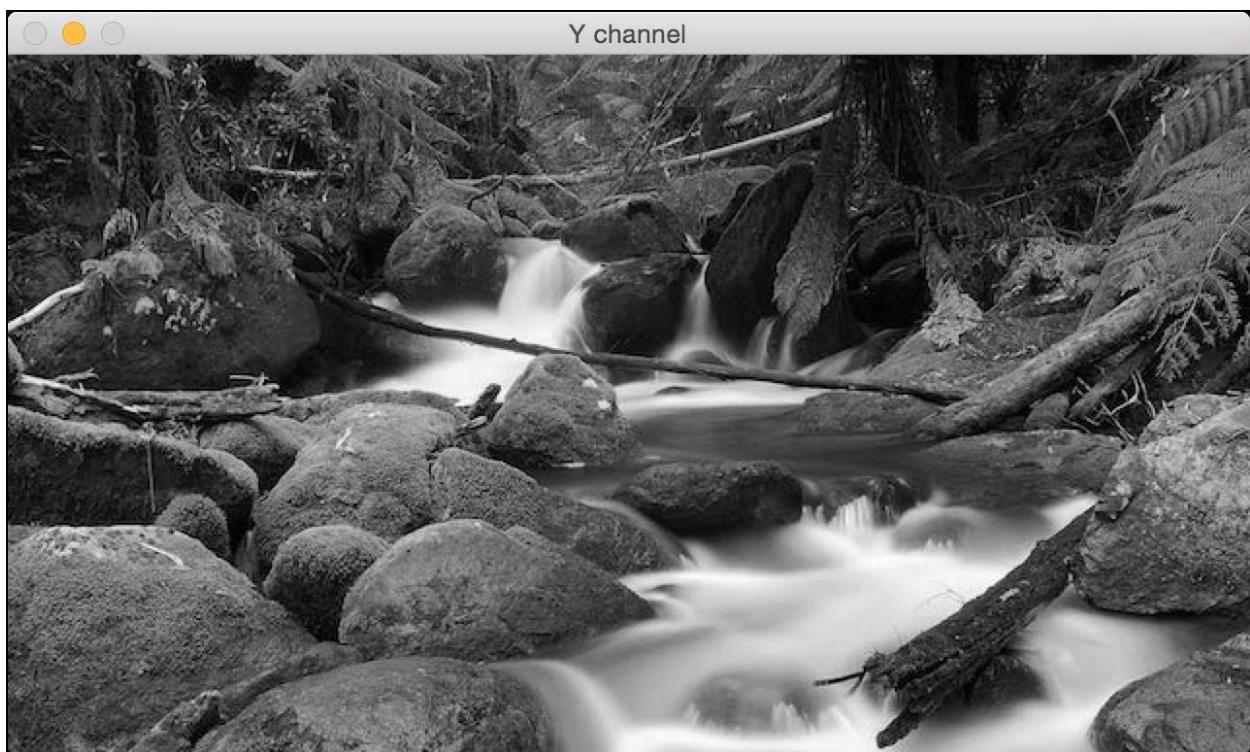
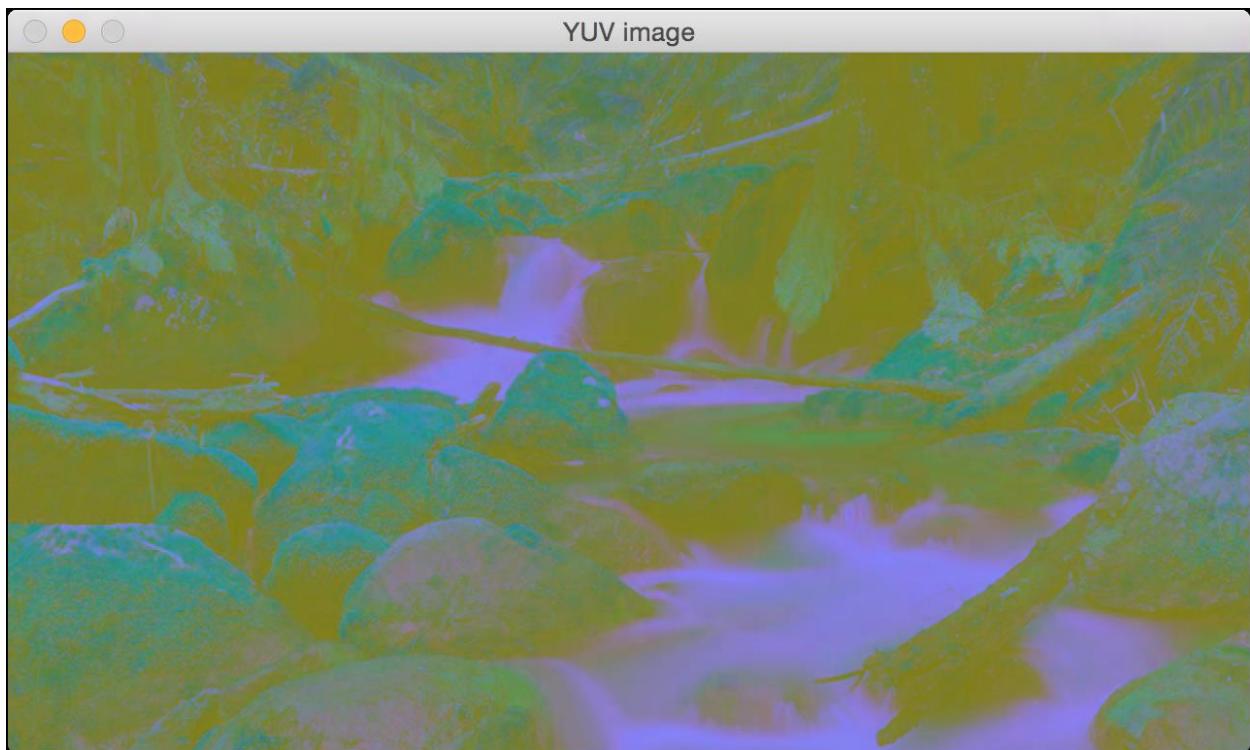




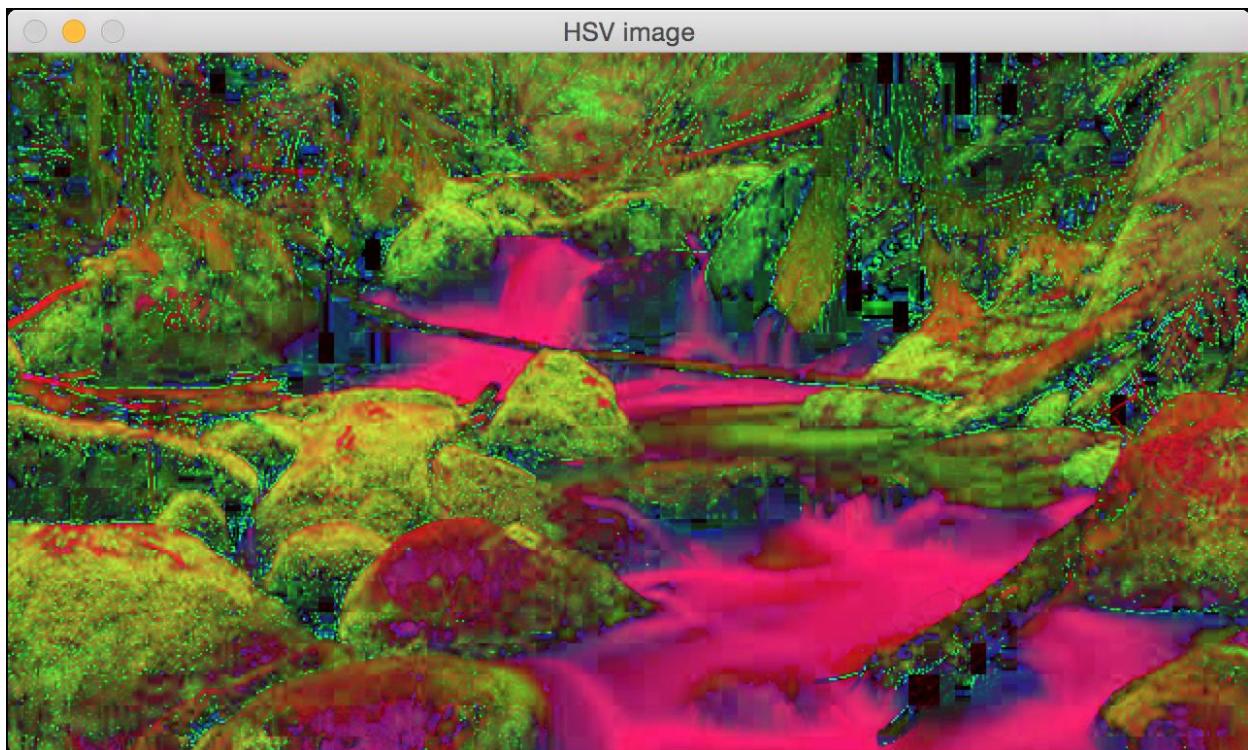




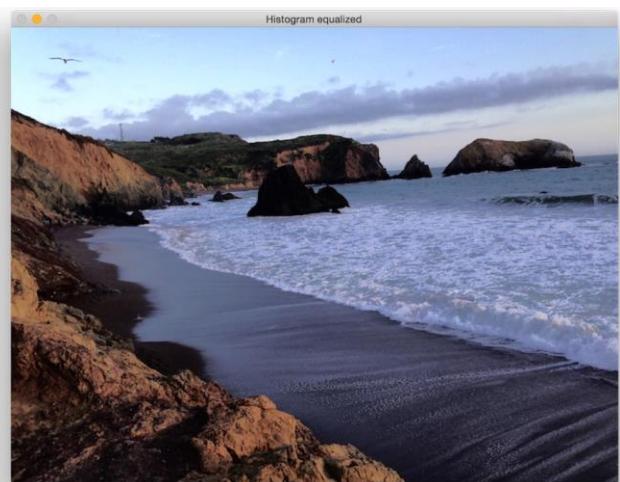
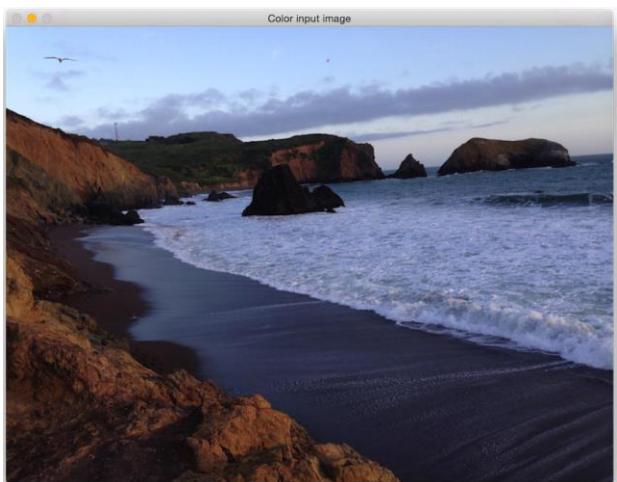


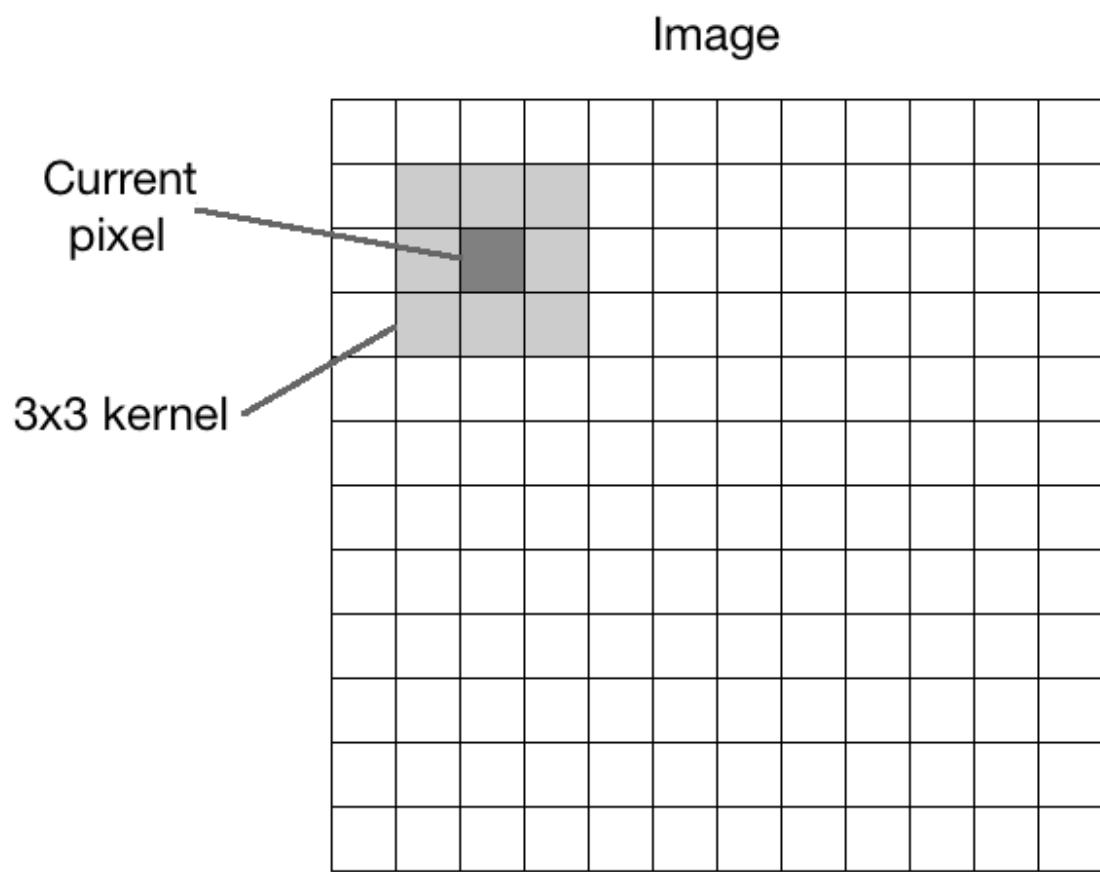






## Chapter 2





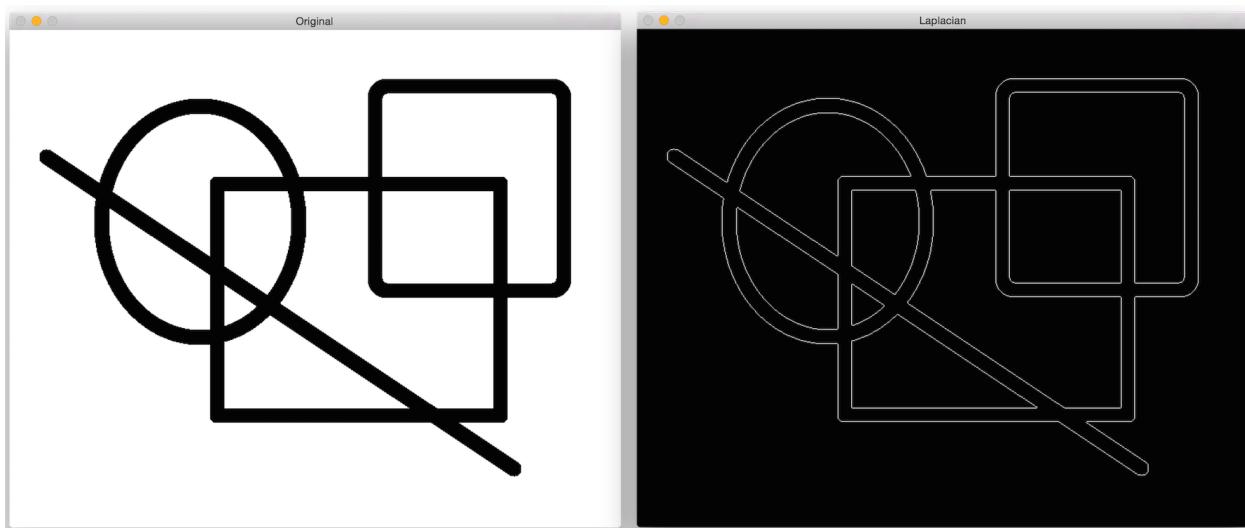
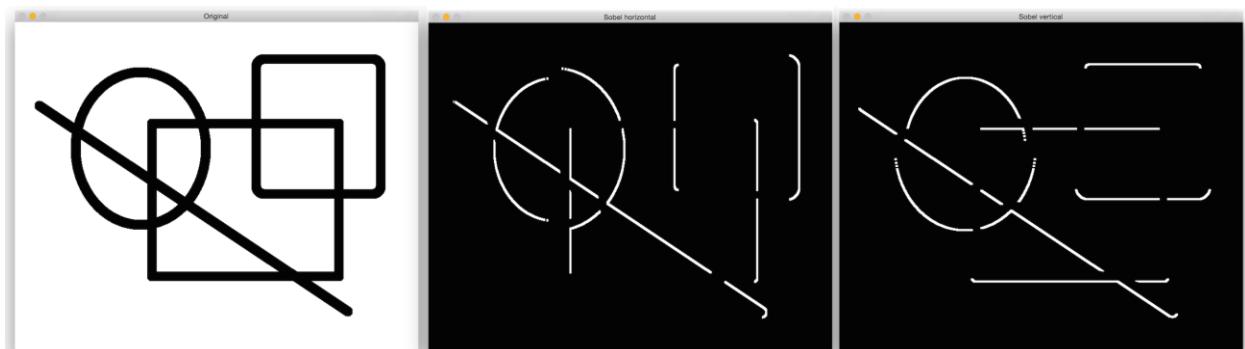
$$I = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

$$L = \frac{1}{9} \begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix}$$



$$S_x = \begin{bmatrix} -1 & 0 & 1 \\ -2 & 0 & 2 \\ -1 & 0 & 1 \end{bmatrix}$$

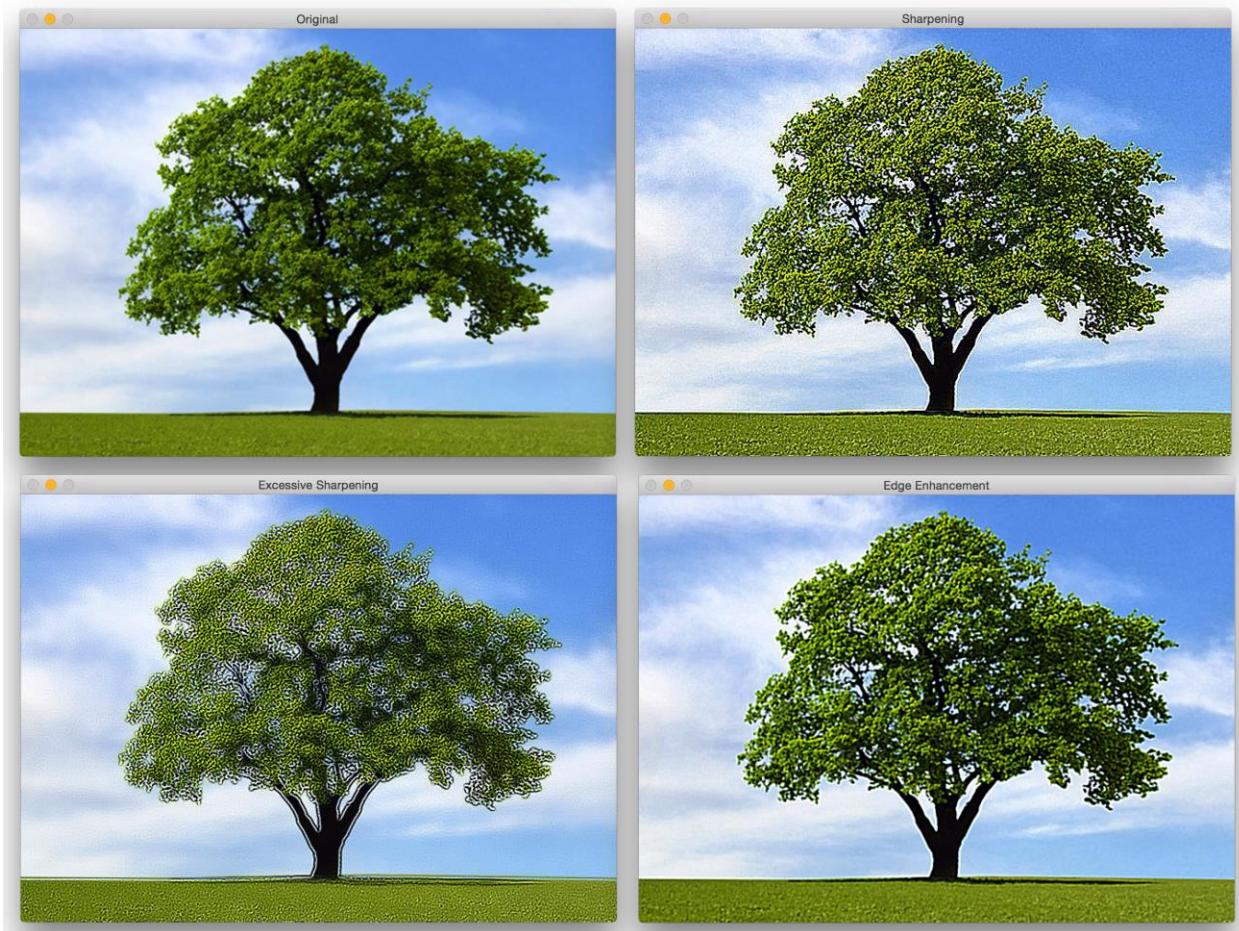
$$S_y = \begin{bmatrix} -1 & -2 & -1 \\ 0 & 0 & 0 \\ 1 & 2 & 1 \end{bmatrix}$$





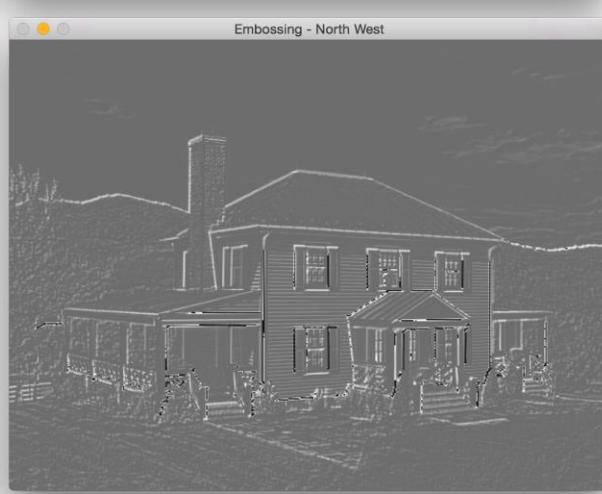
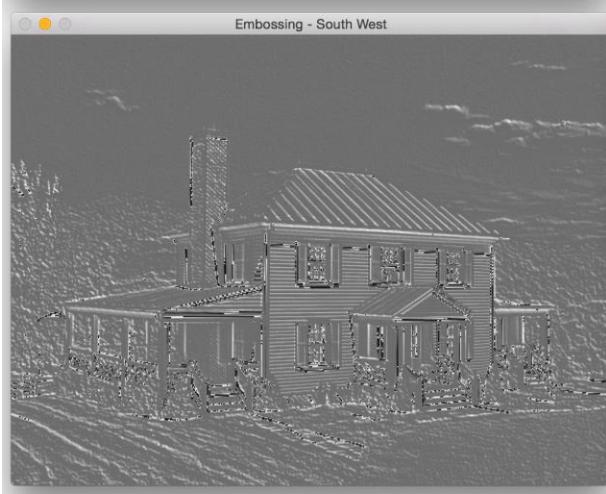
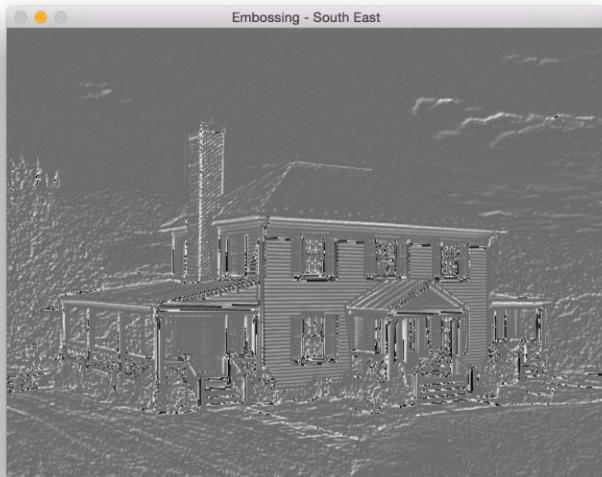


$$M = \begin{bmatrix} 0 & 0 & 0 \\ 1 & 1 & 1 \\ 0 & 0 & 0 \end{bmatrix}$$

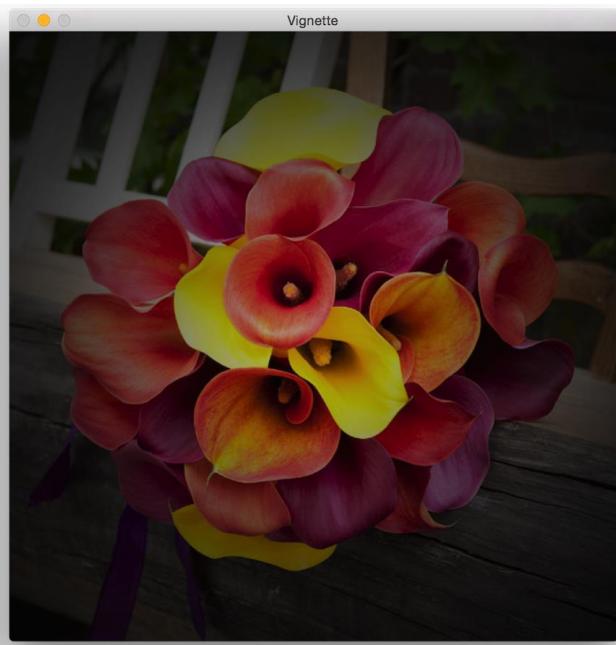


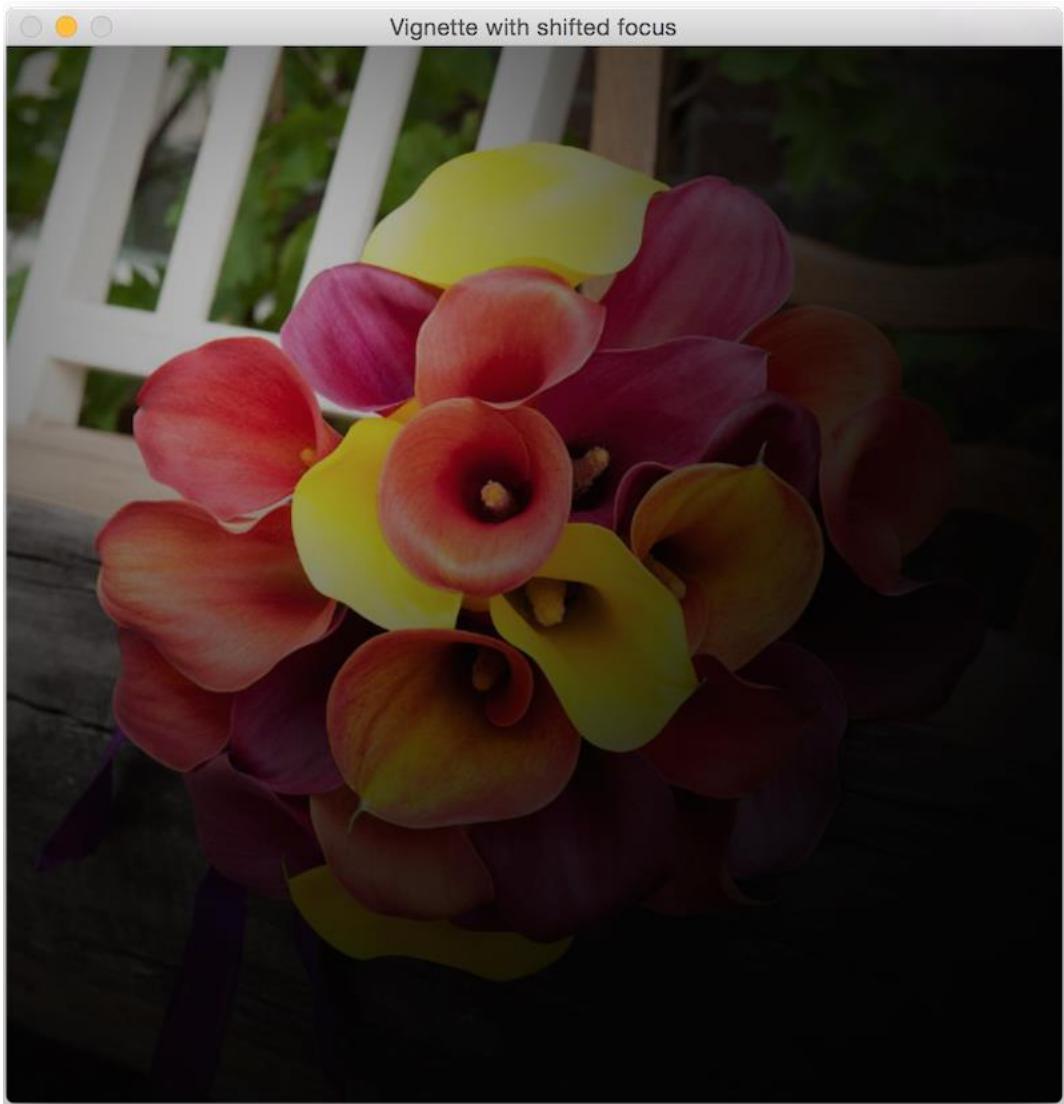
$$M = \begin{bmatrix} -1 & -1 & -1 \\ -1 & 9 & -1 \\ -1 & -1 & -1 \end{bmatrix}$$

$$M = \begin{bmatrix} 1 & 1 & 1 \\ 1 & -7 & 1 \\ 1 & 1 & 1 \end{bmatrix}$$

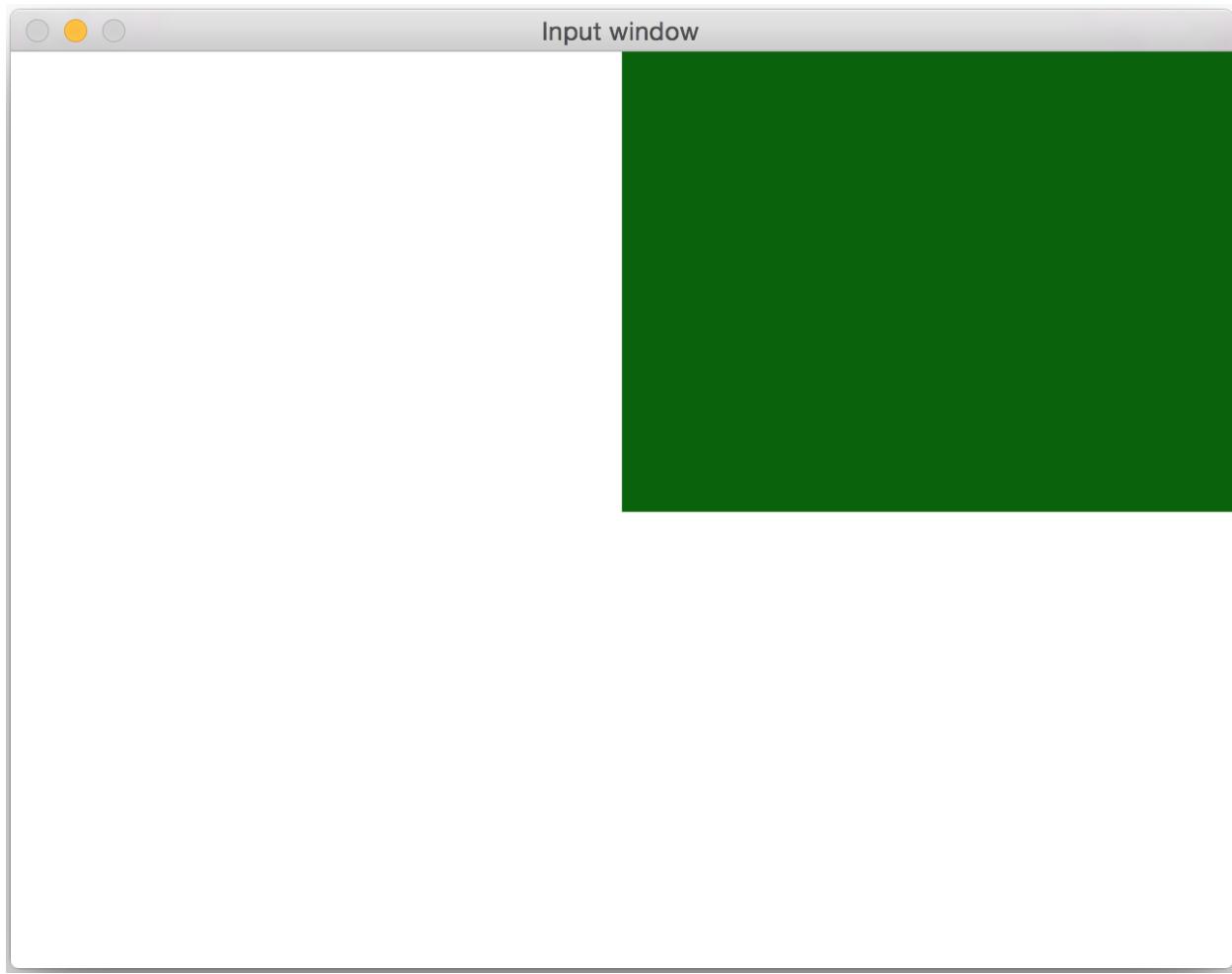


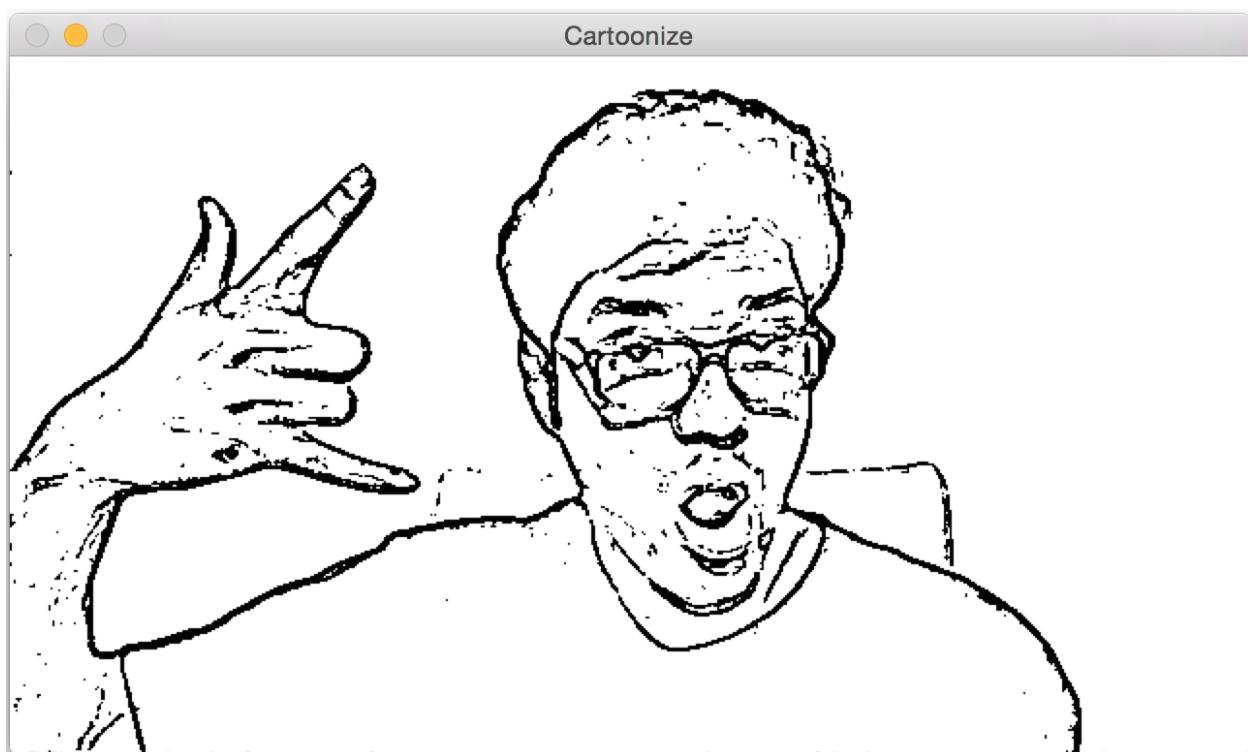
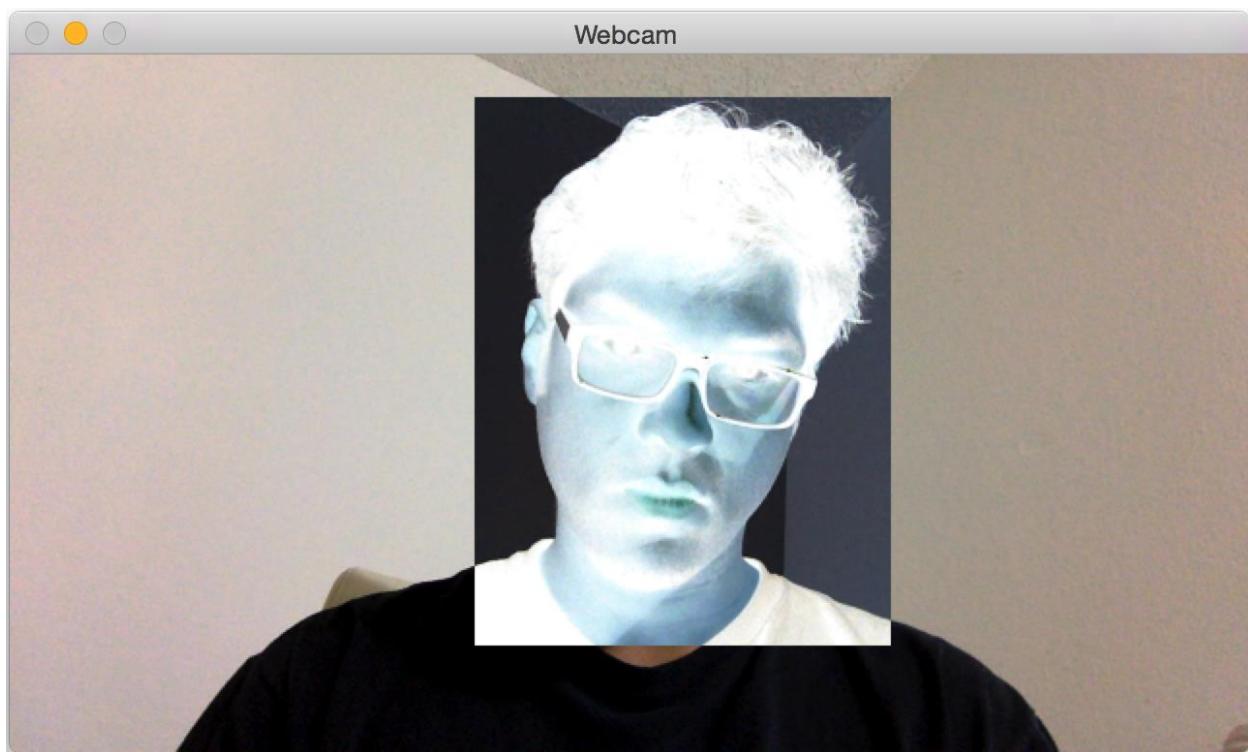


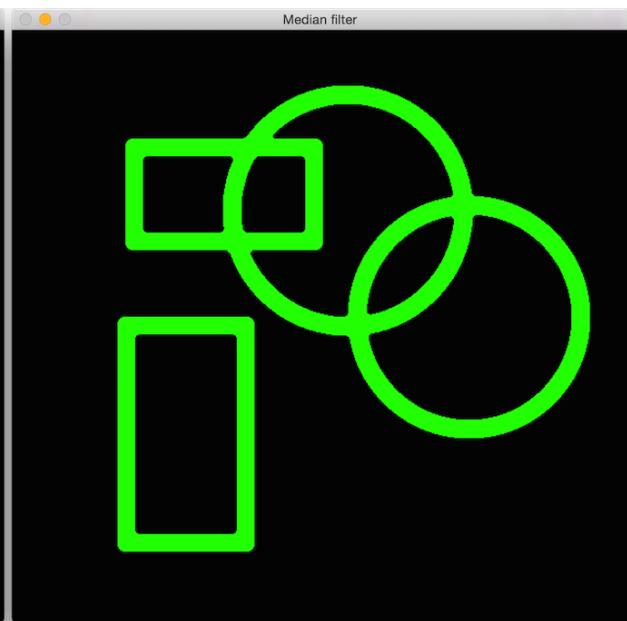
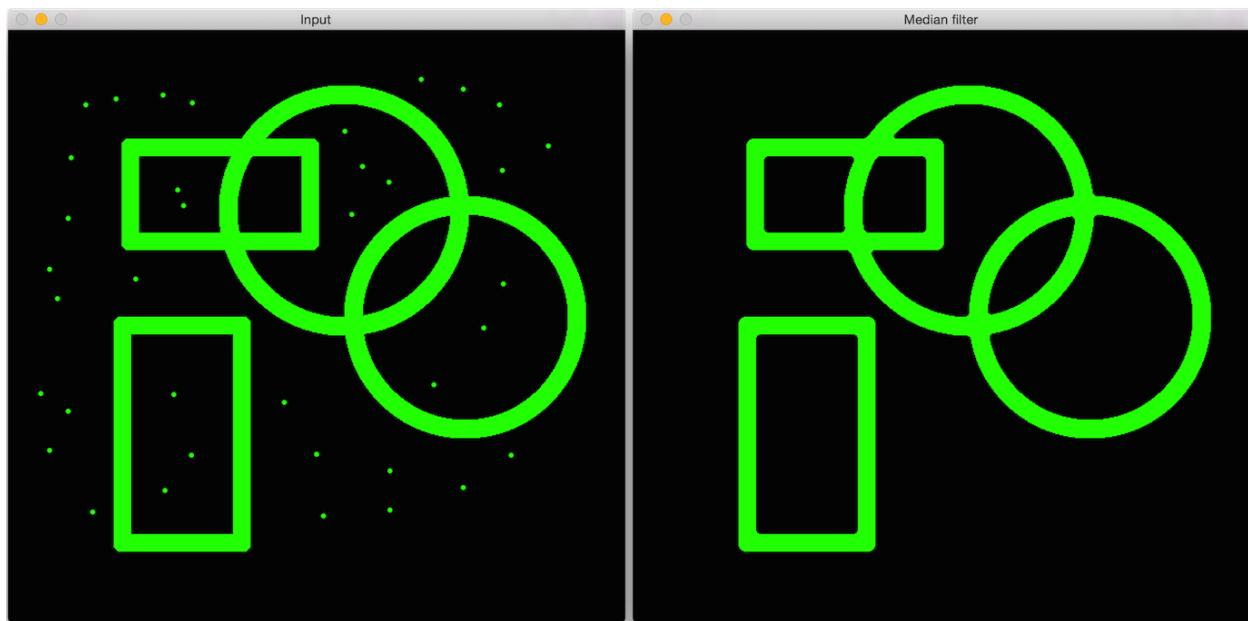
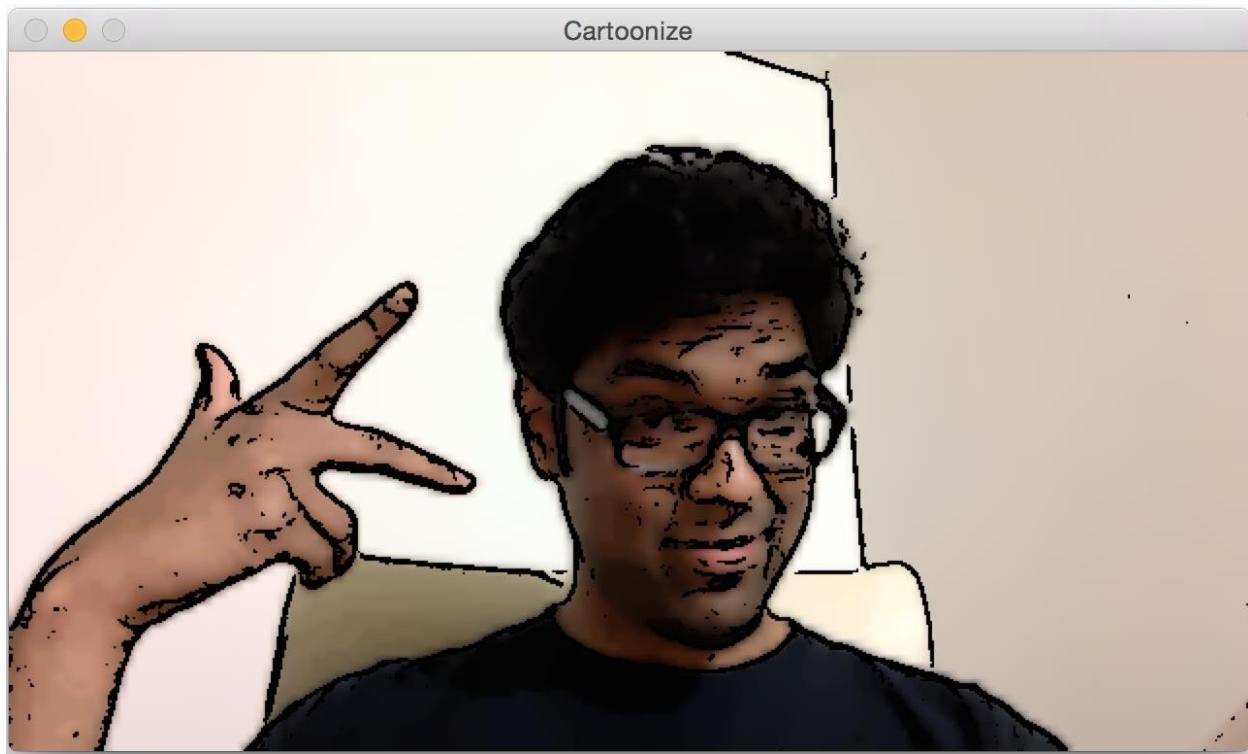


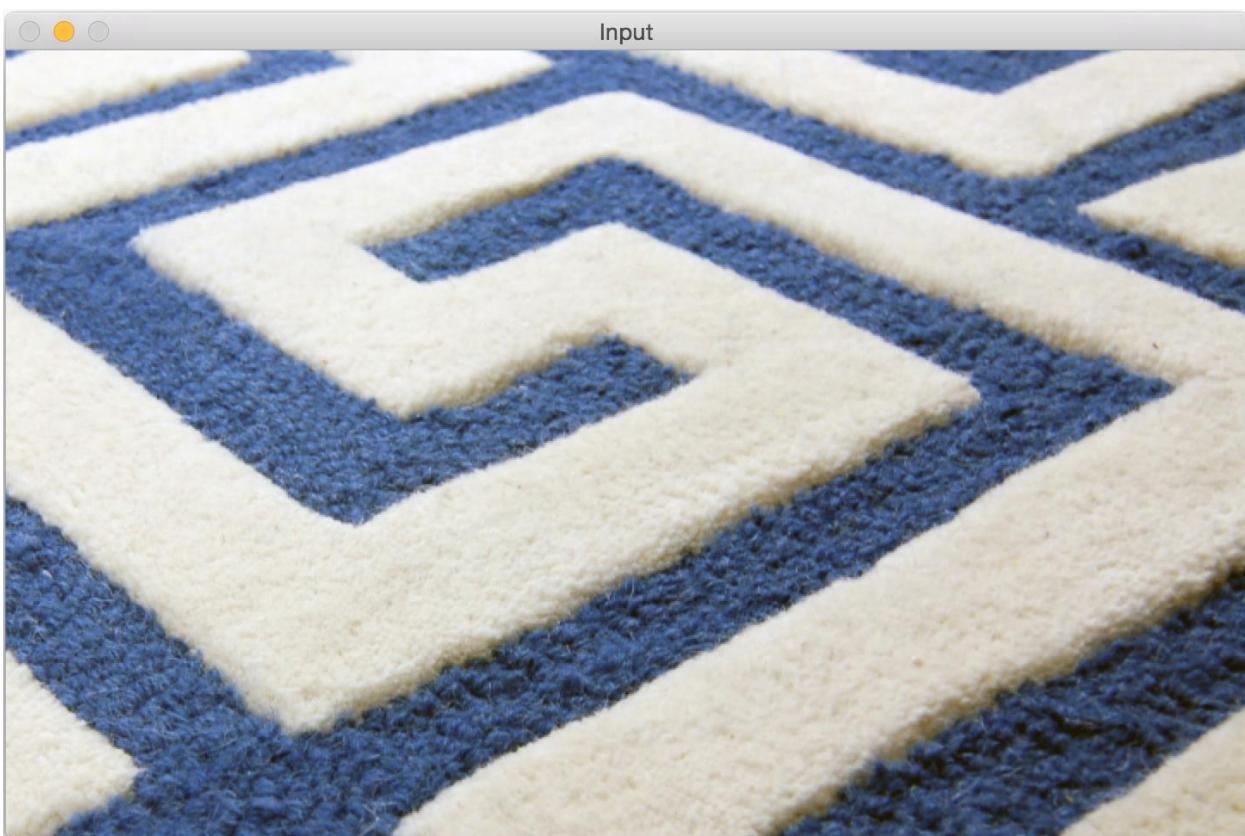
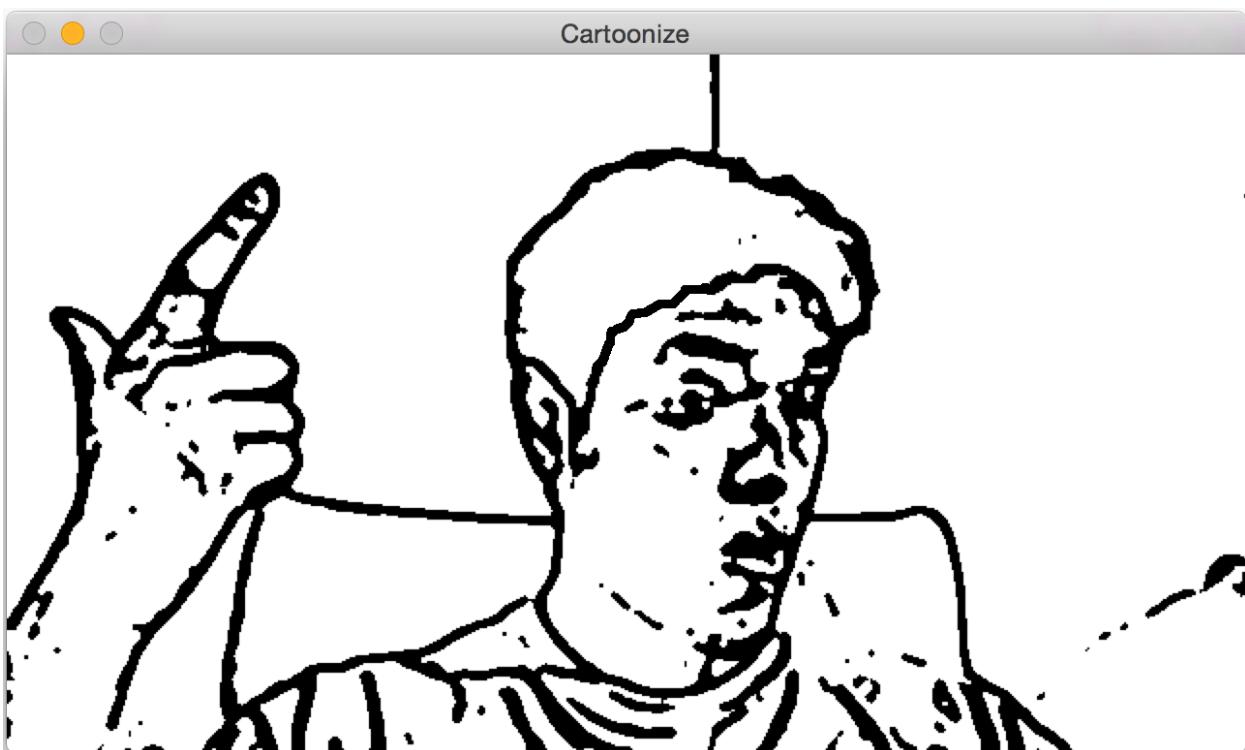


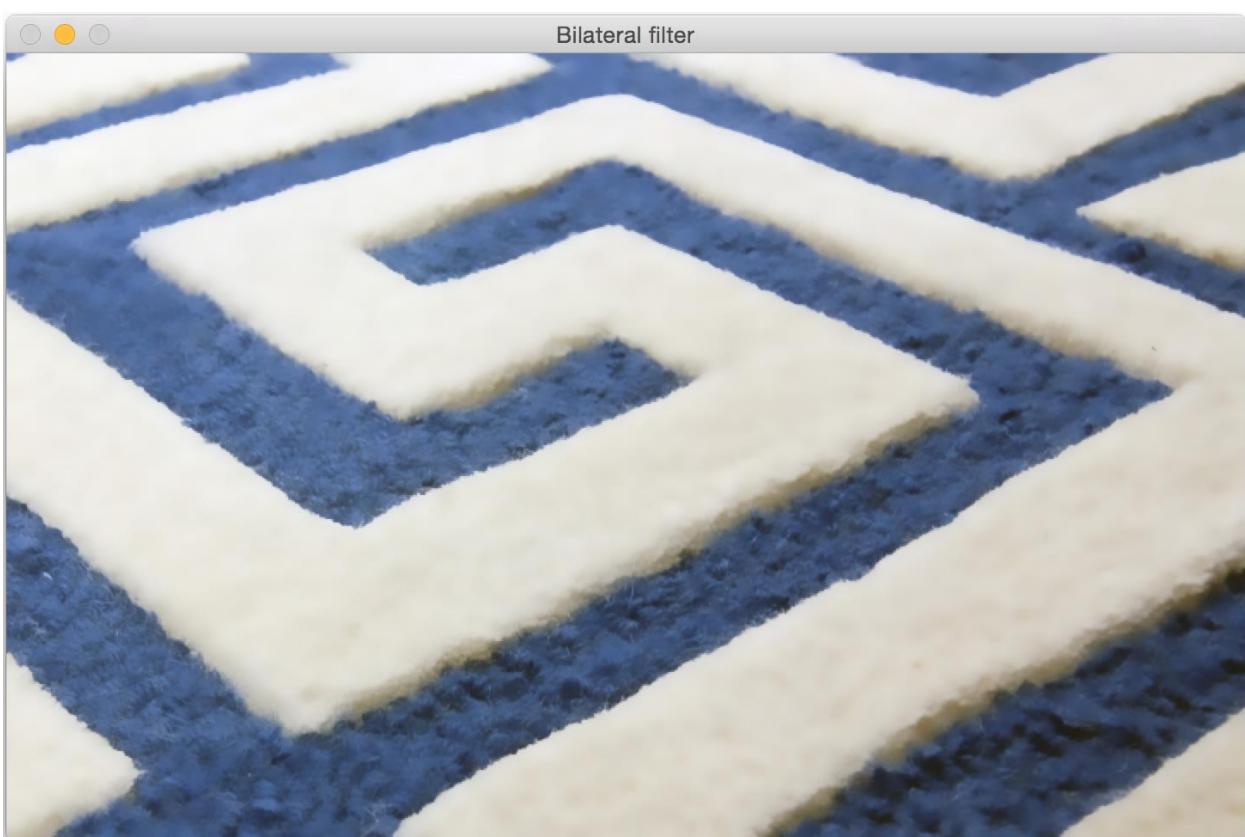
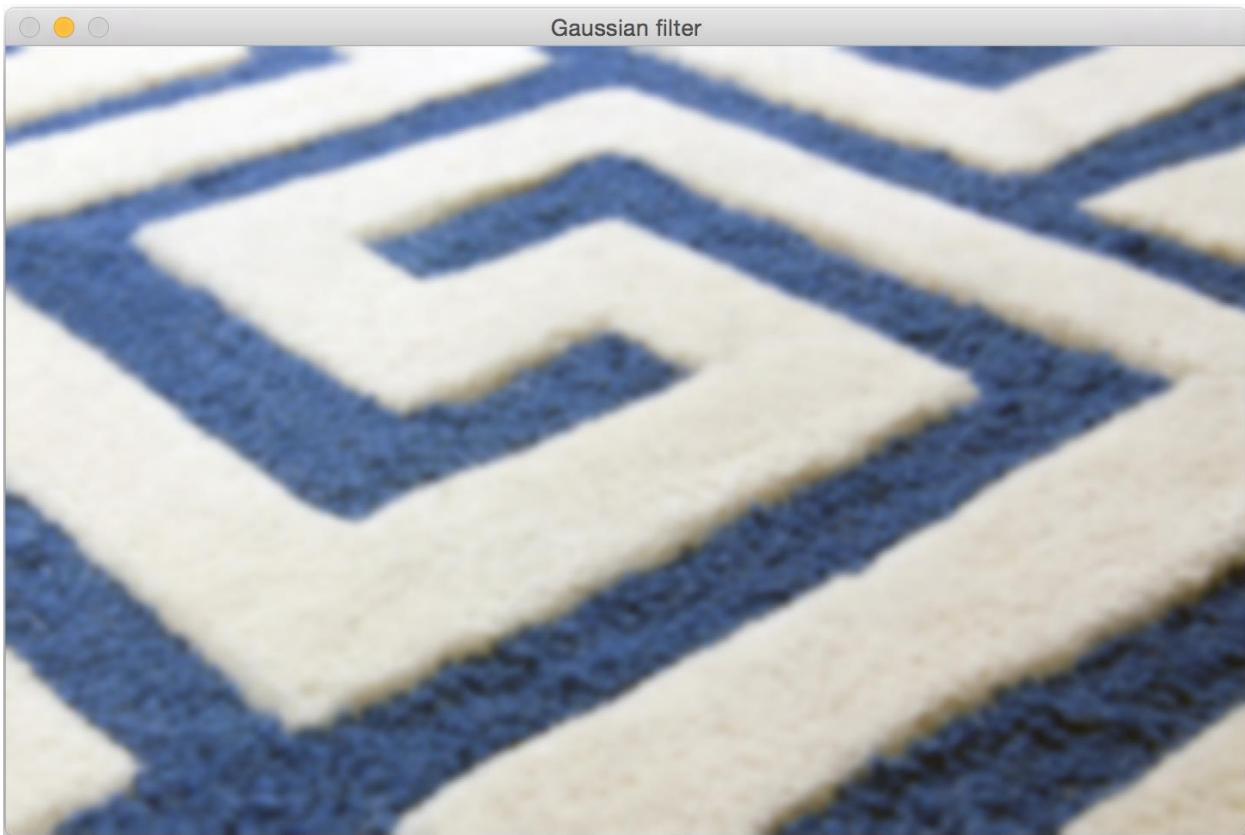
## Chapter 3



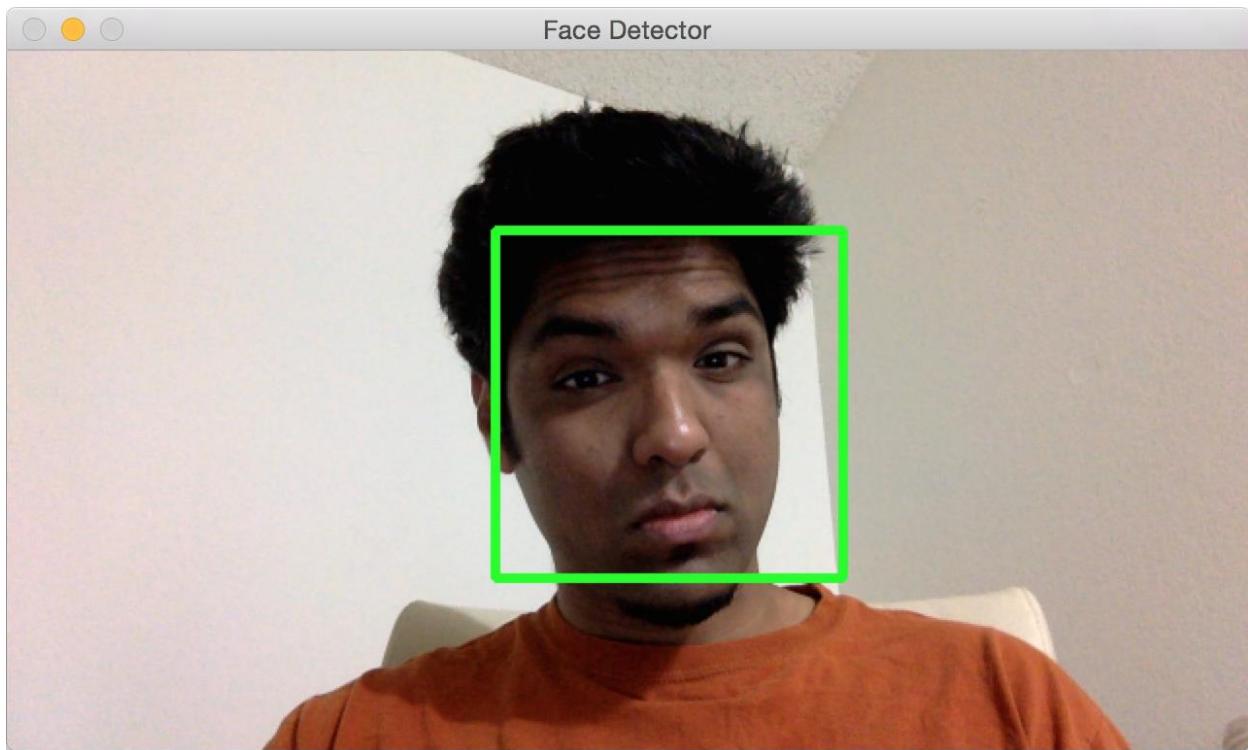
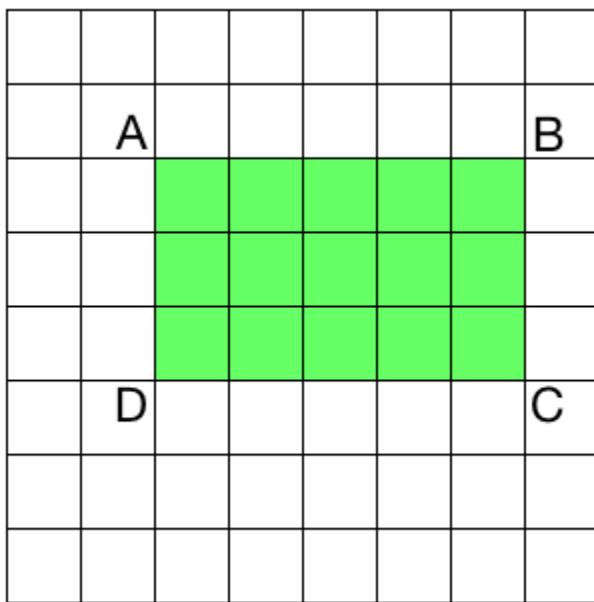






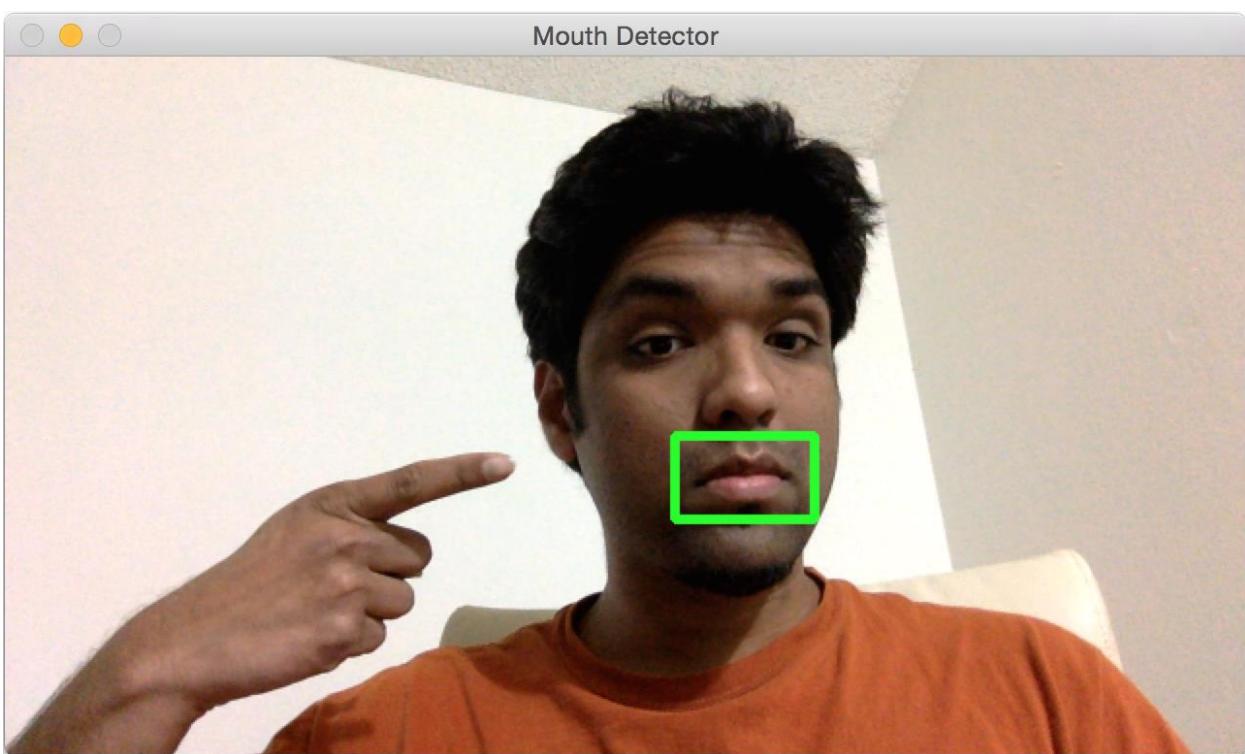
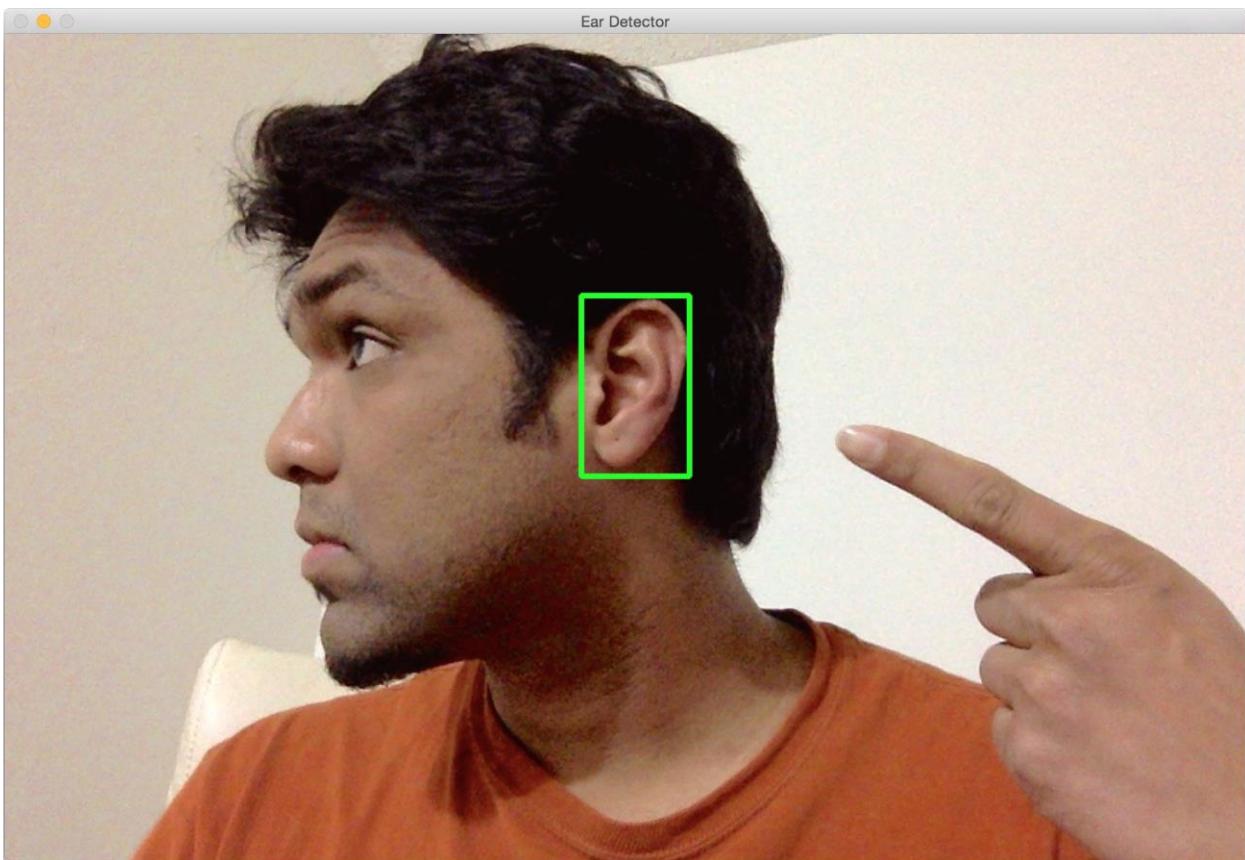


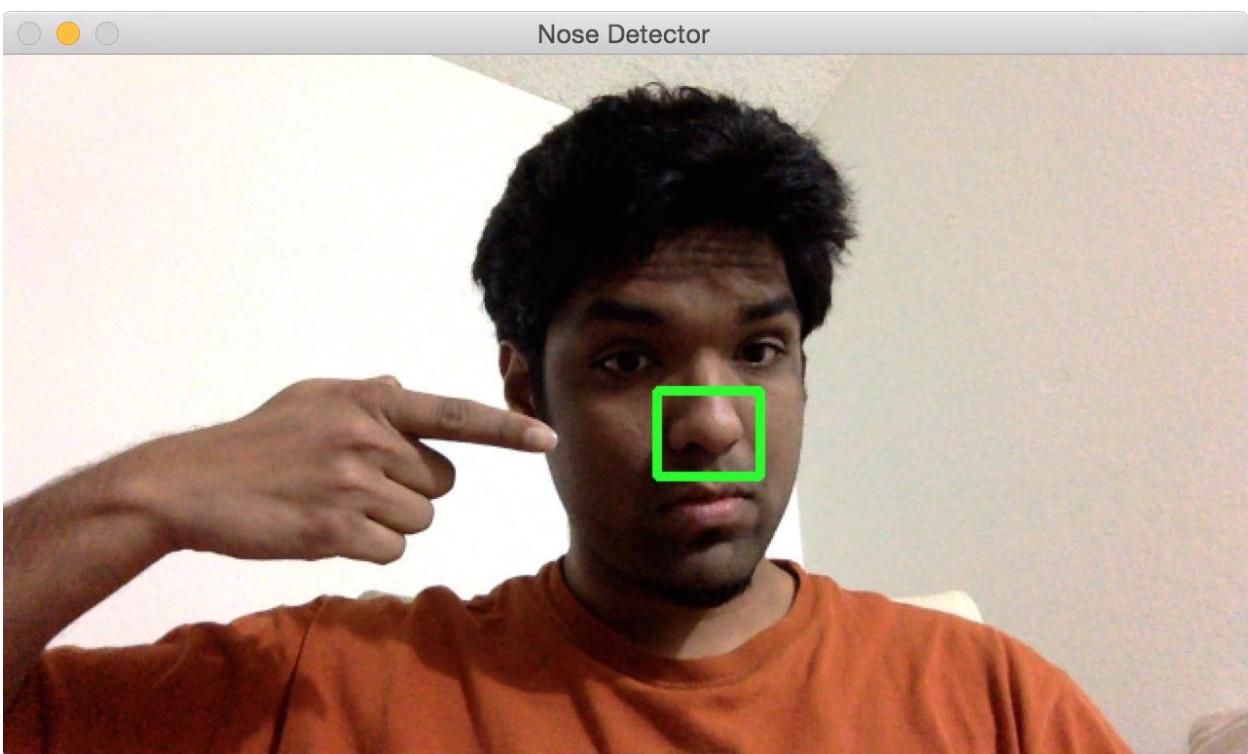
## Chapter 4







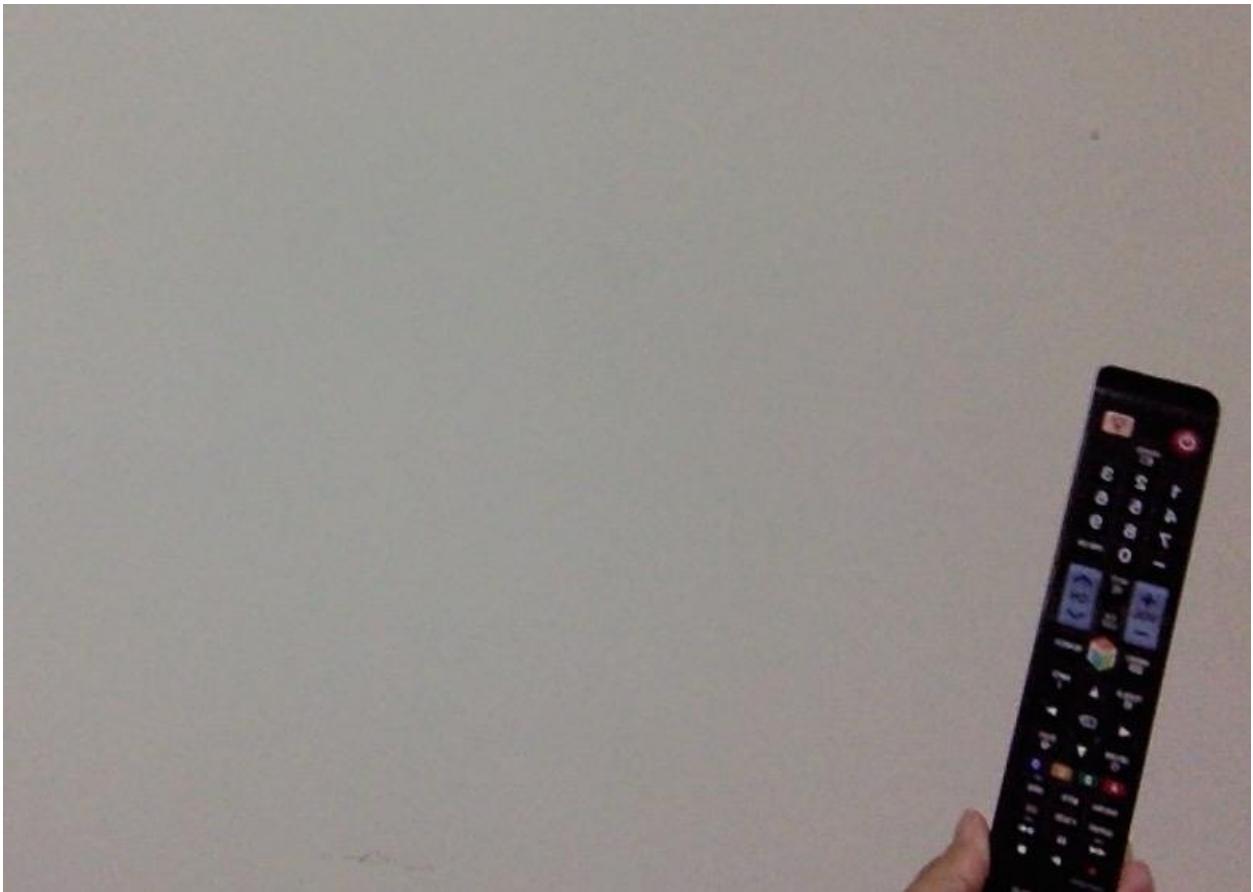


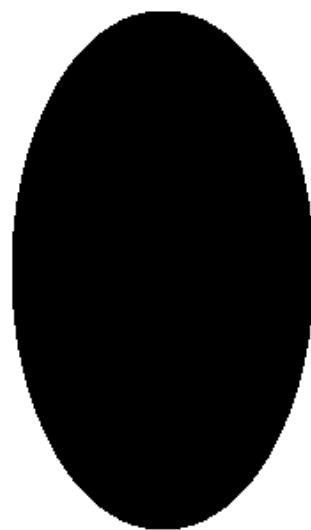
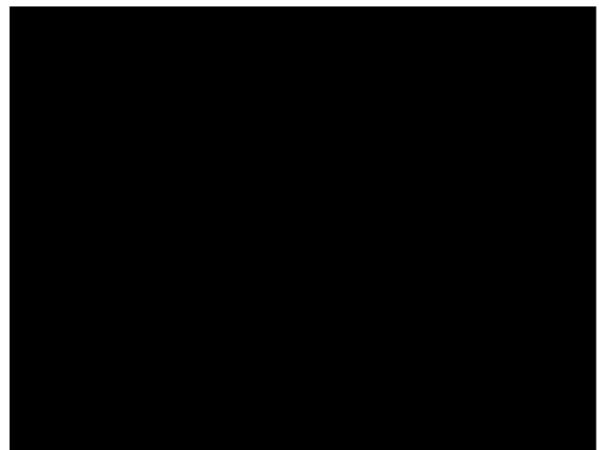


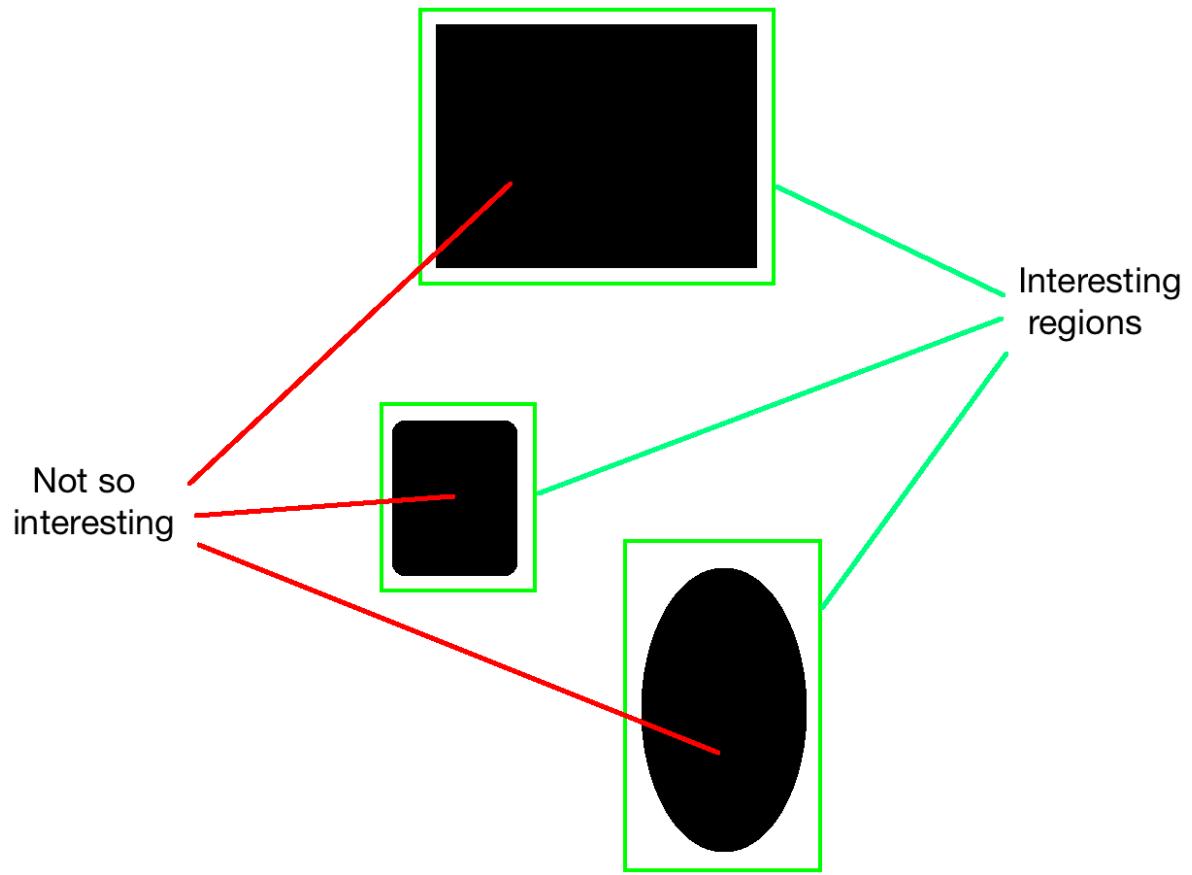


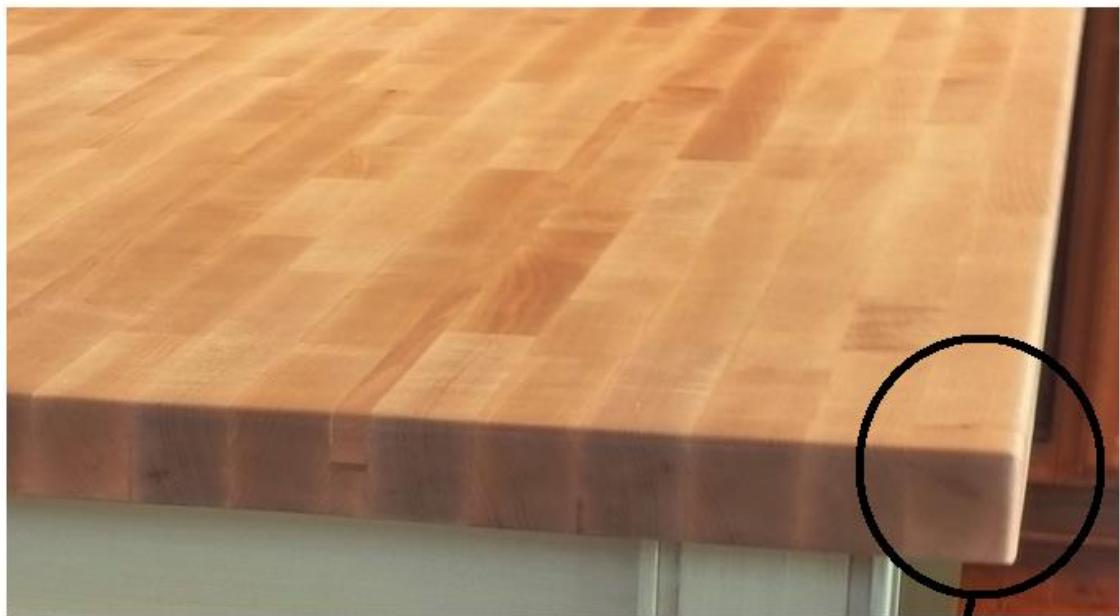
## Chapter 5







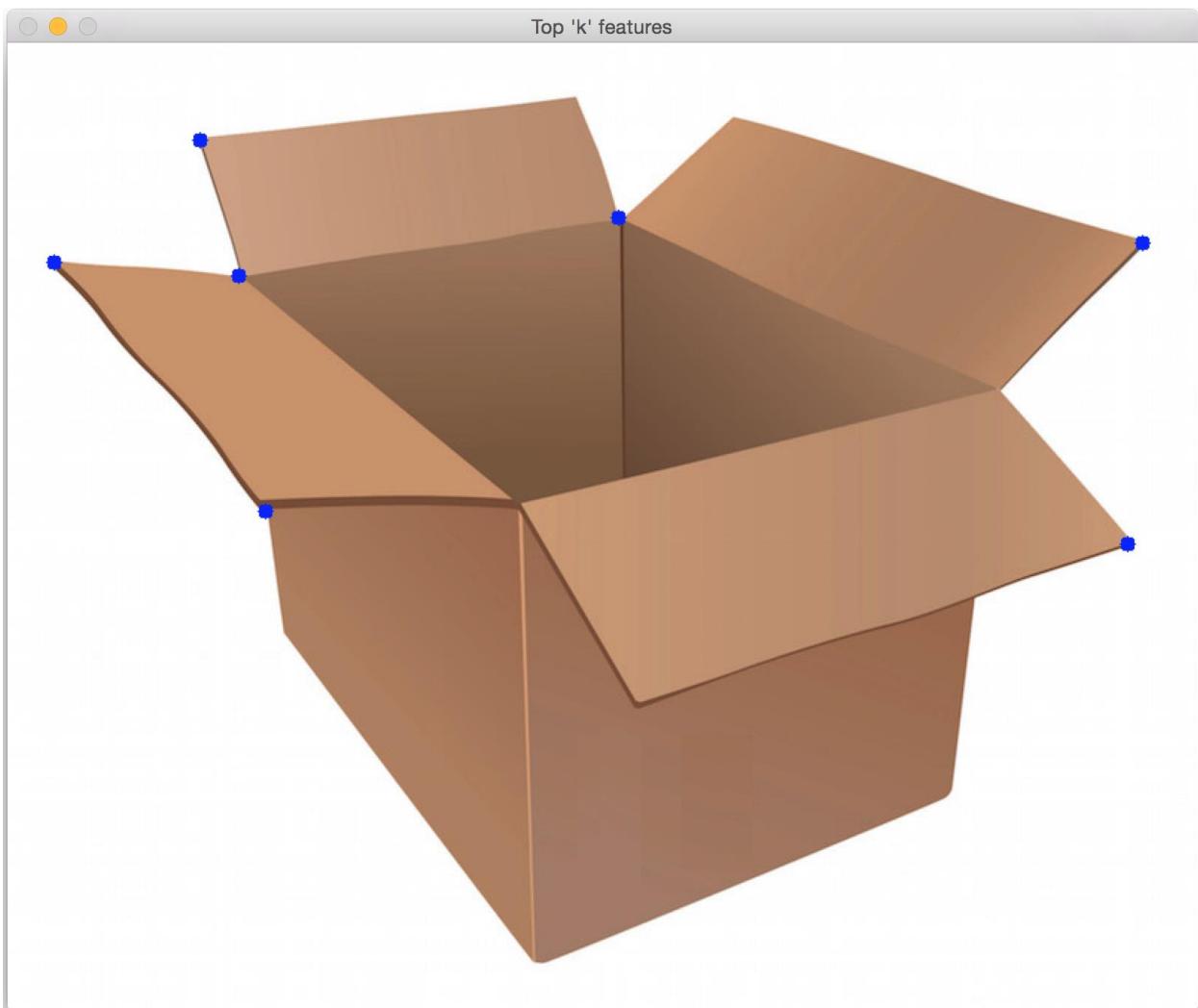


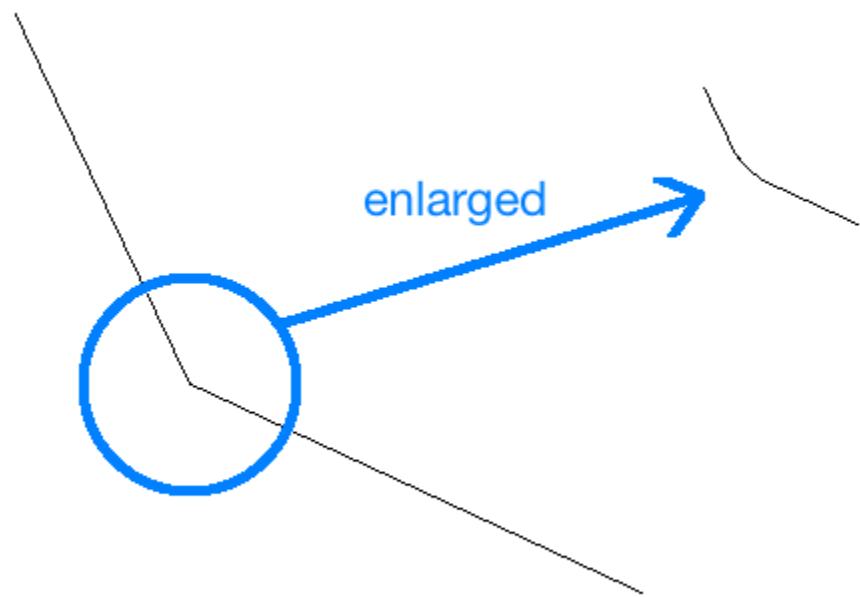


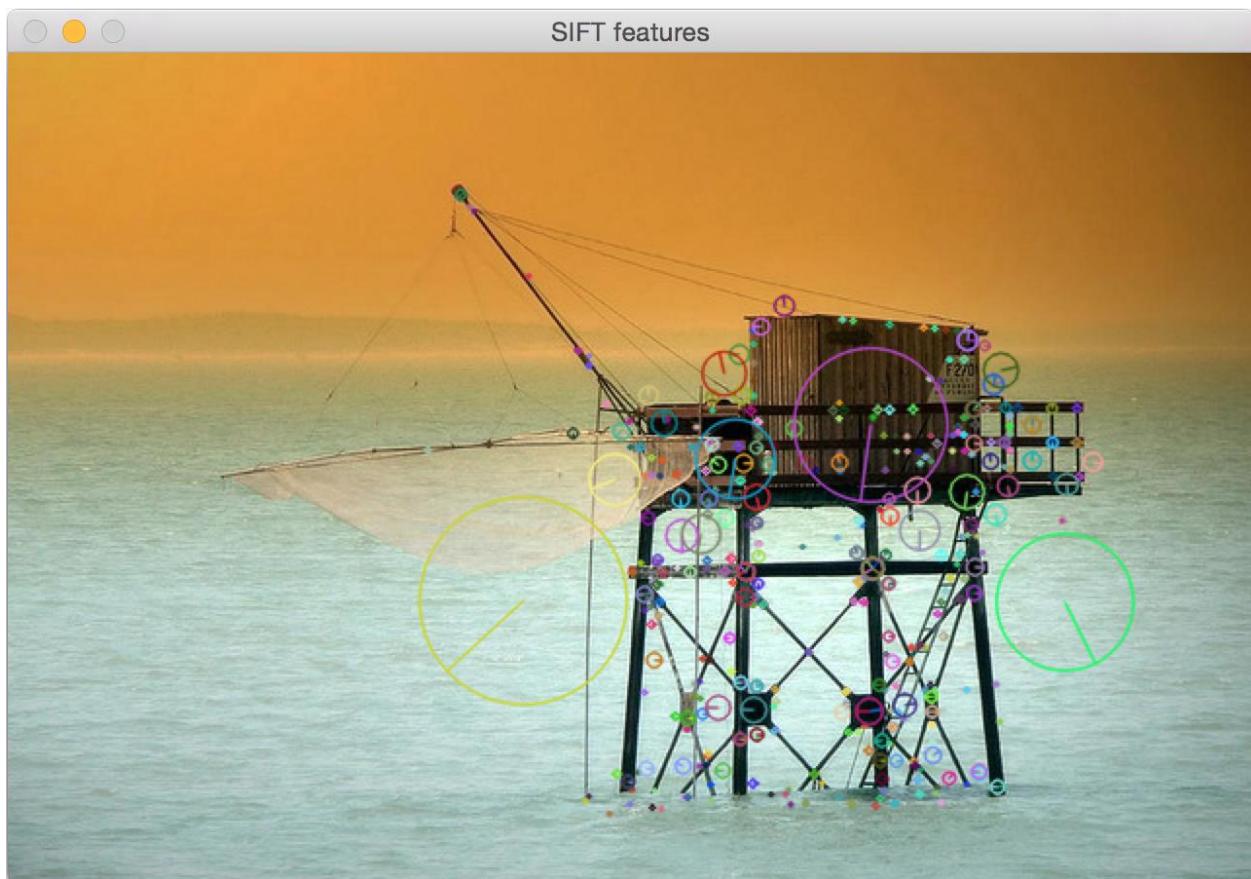
Interesting



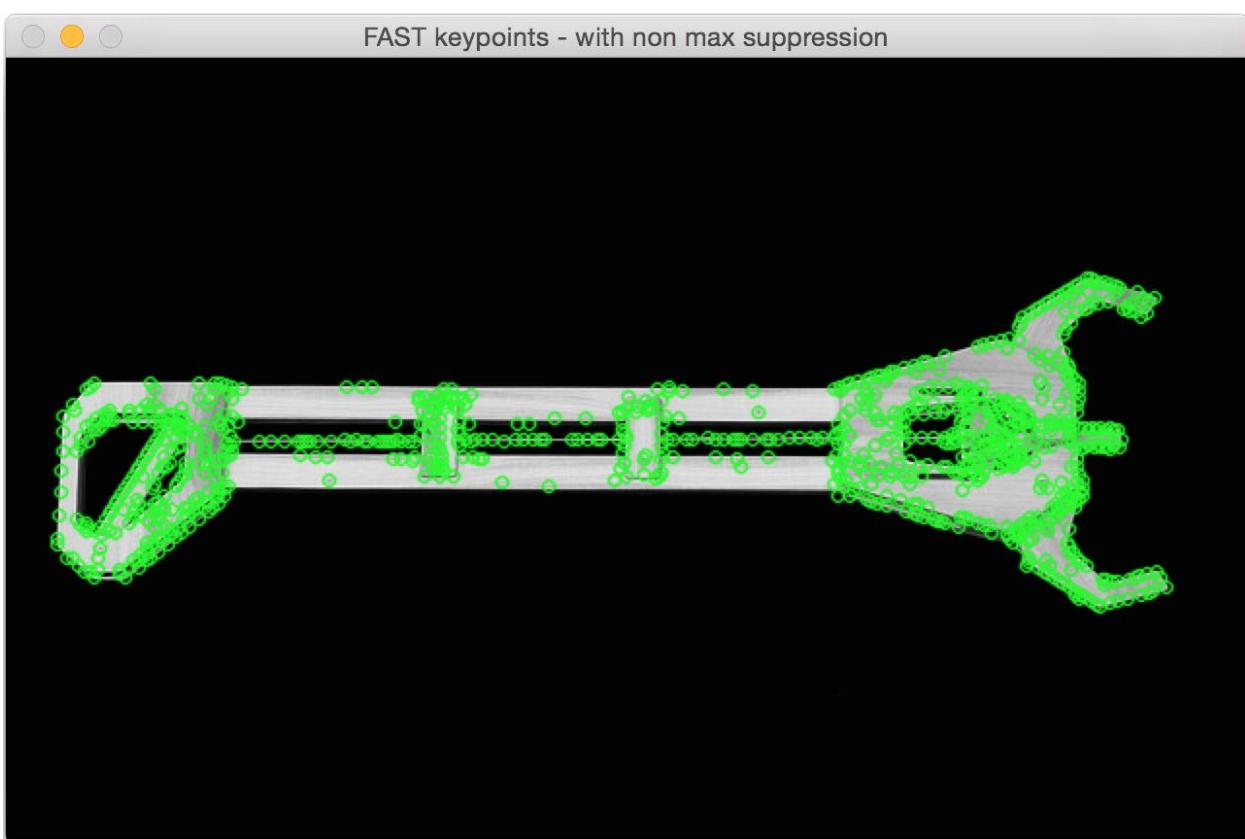
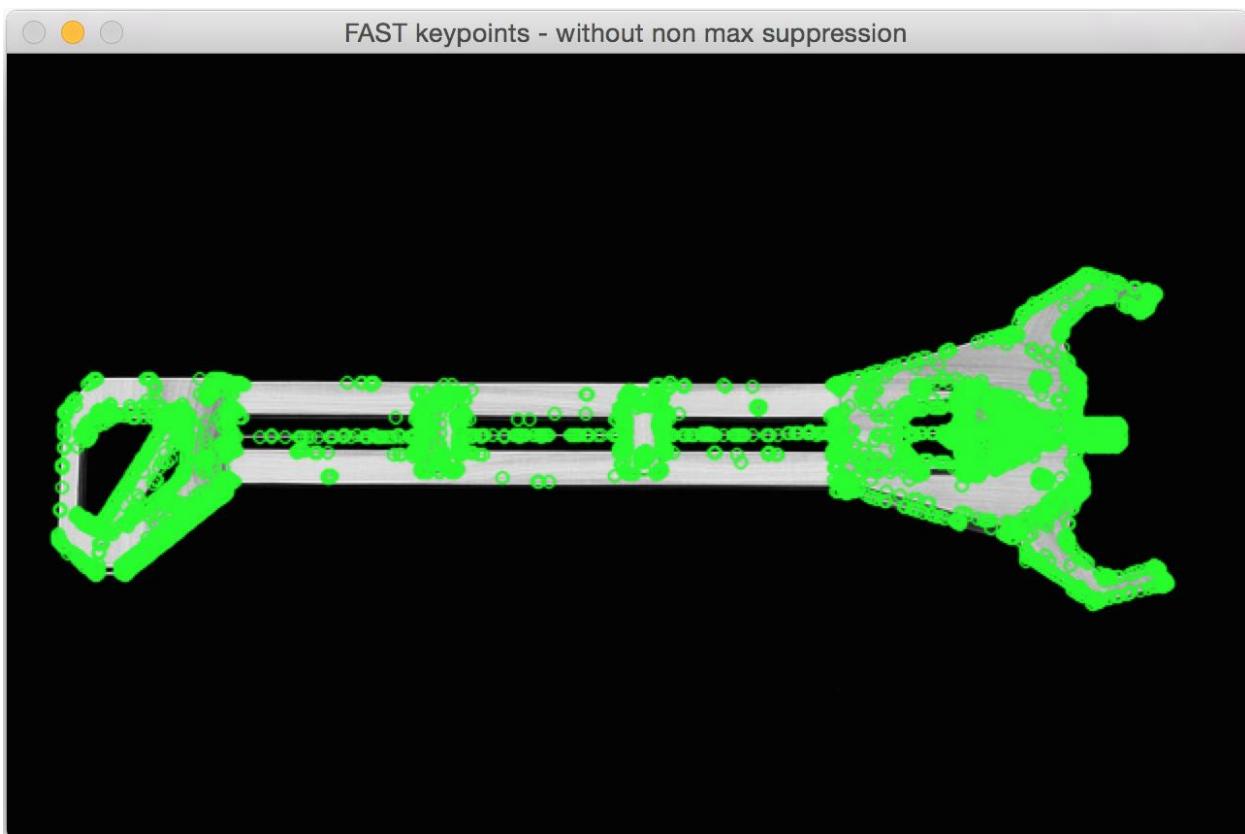


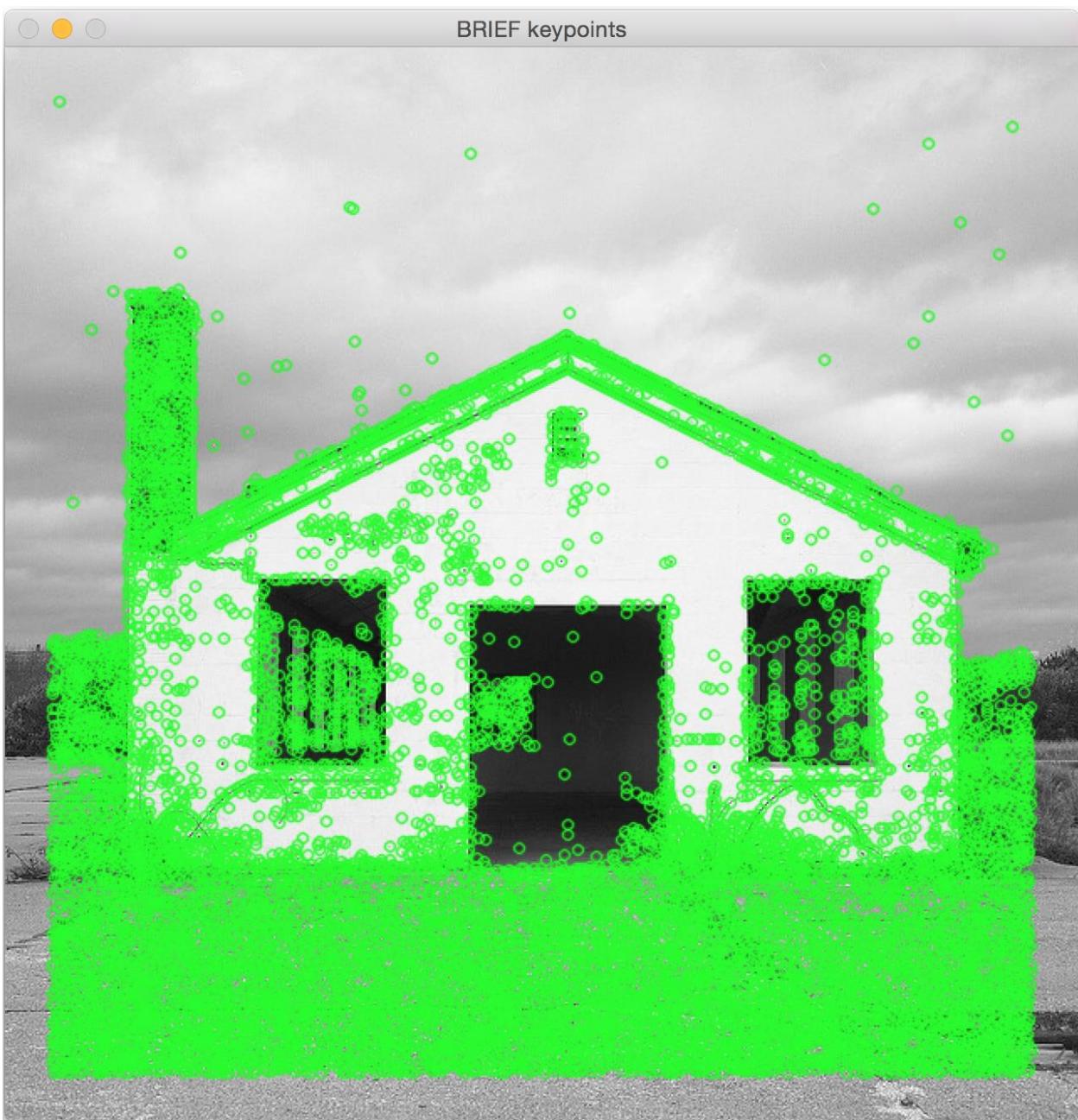


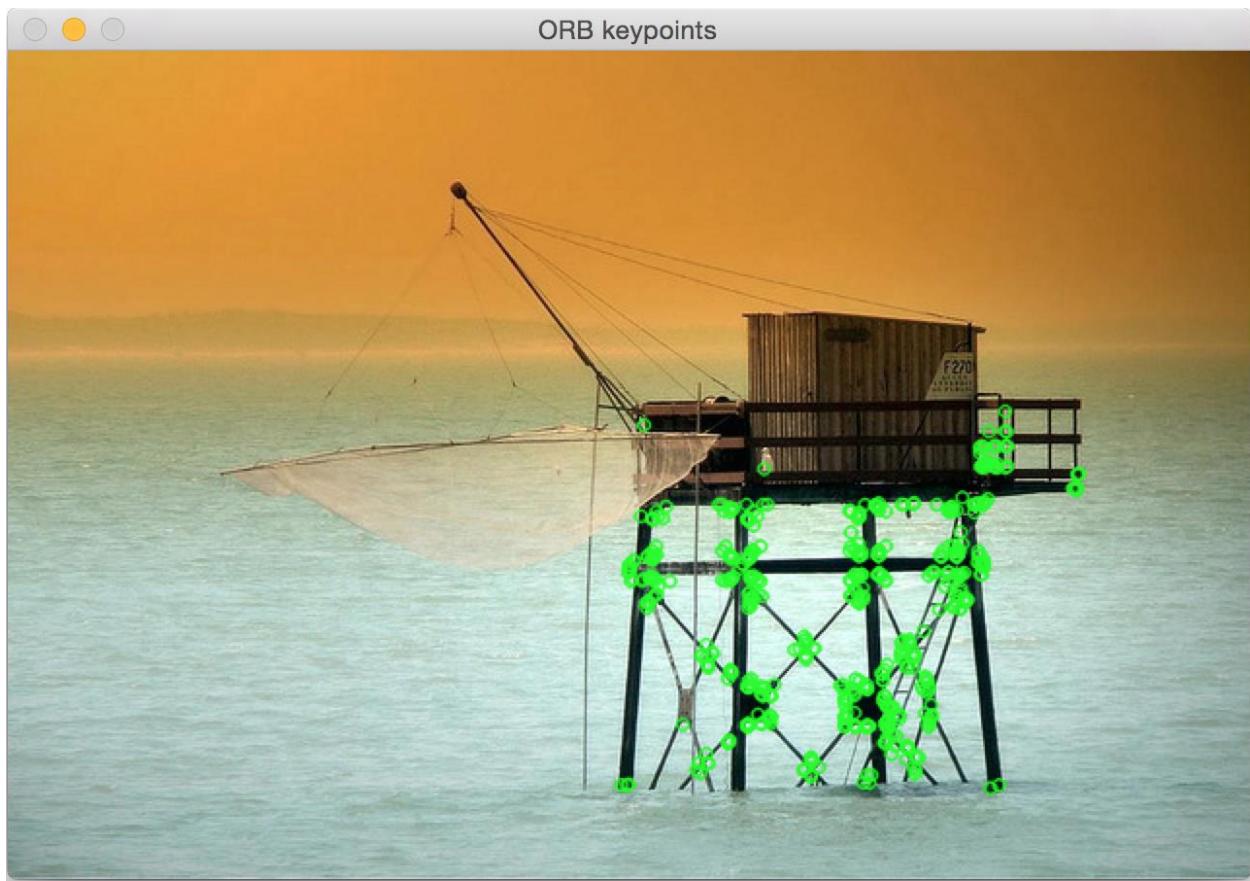




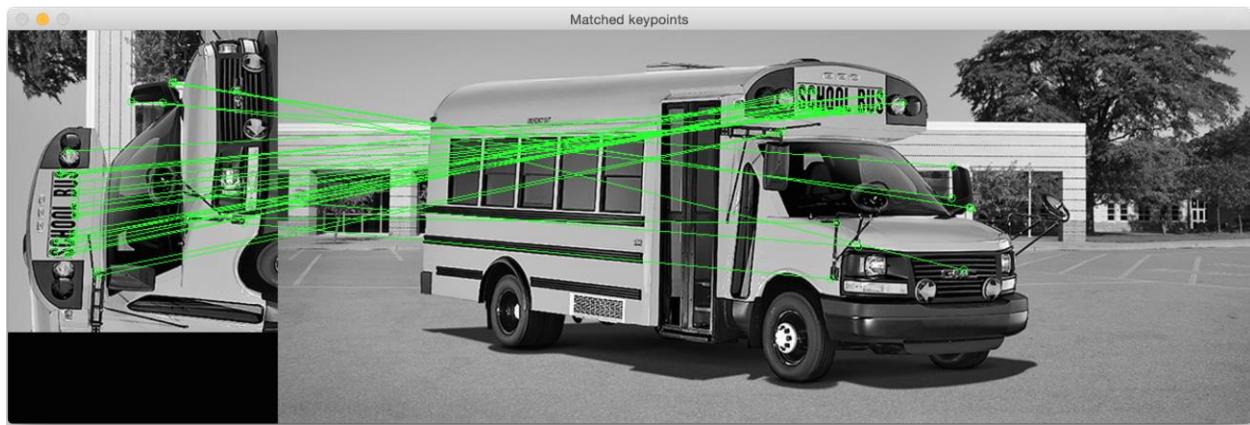


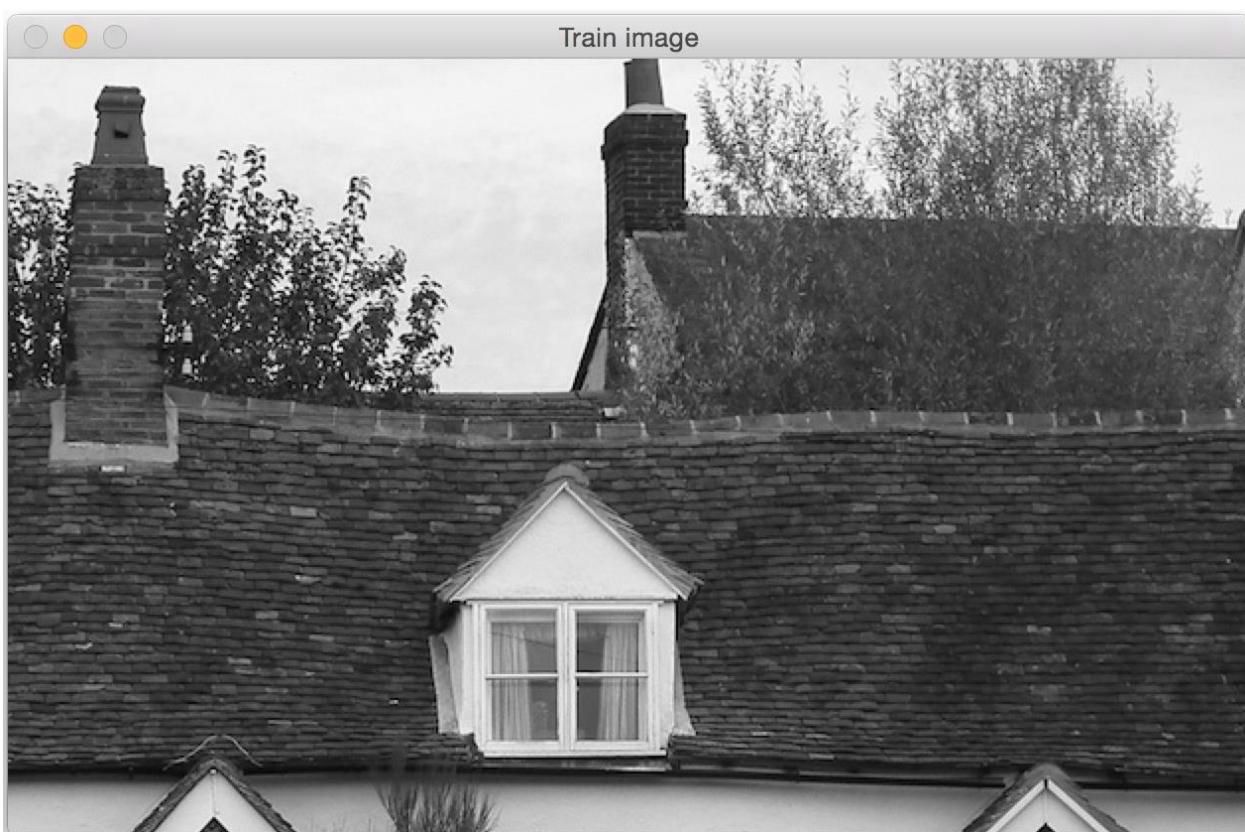






## Chapter 6









Frame 1



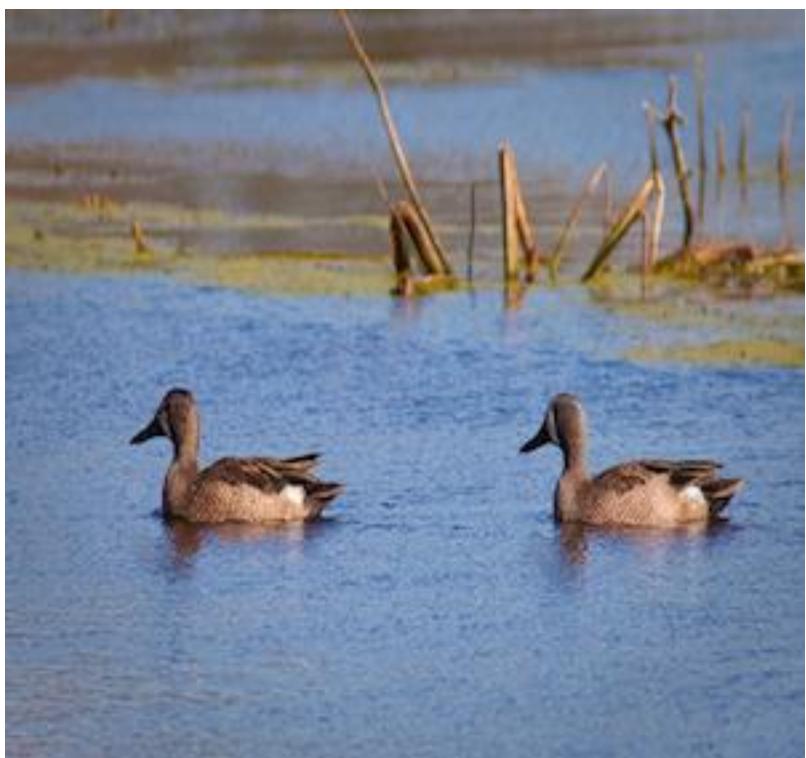
Frame 2







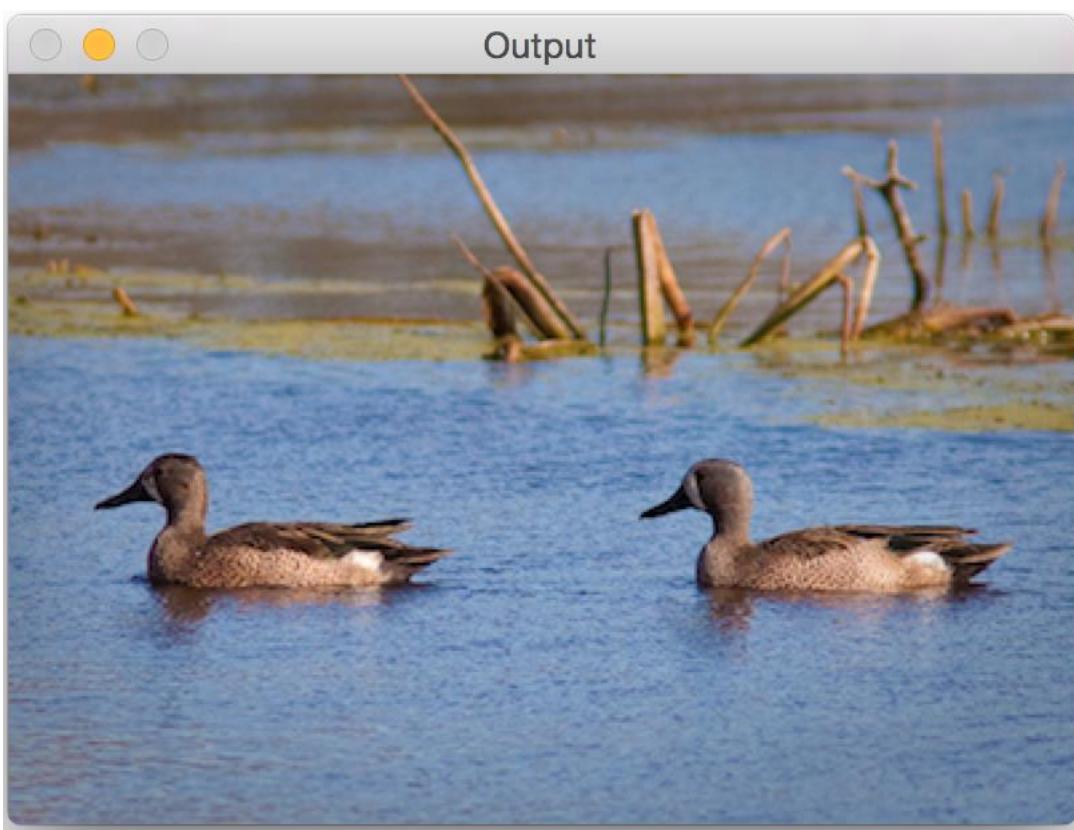
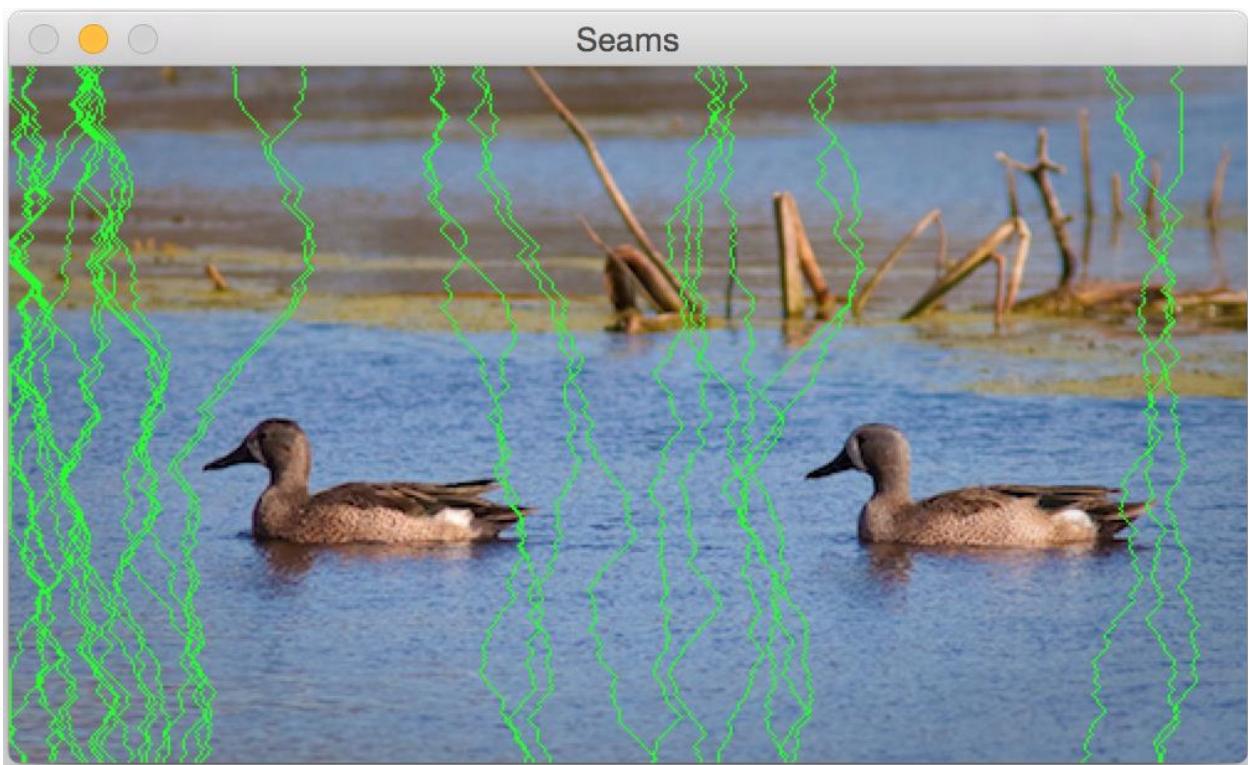
## Chapter 7

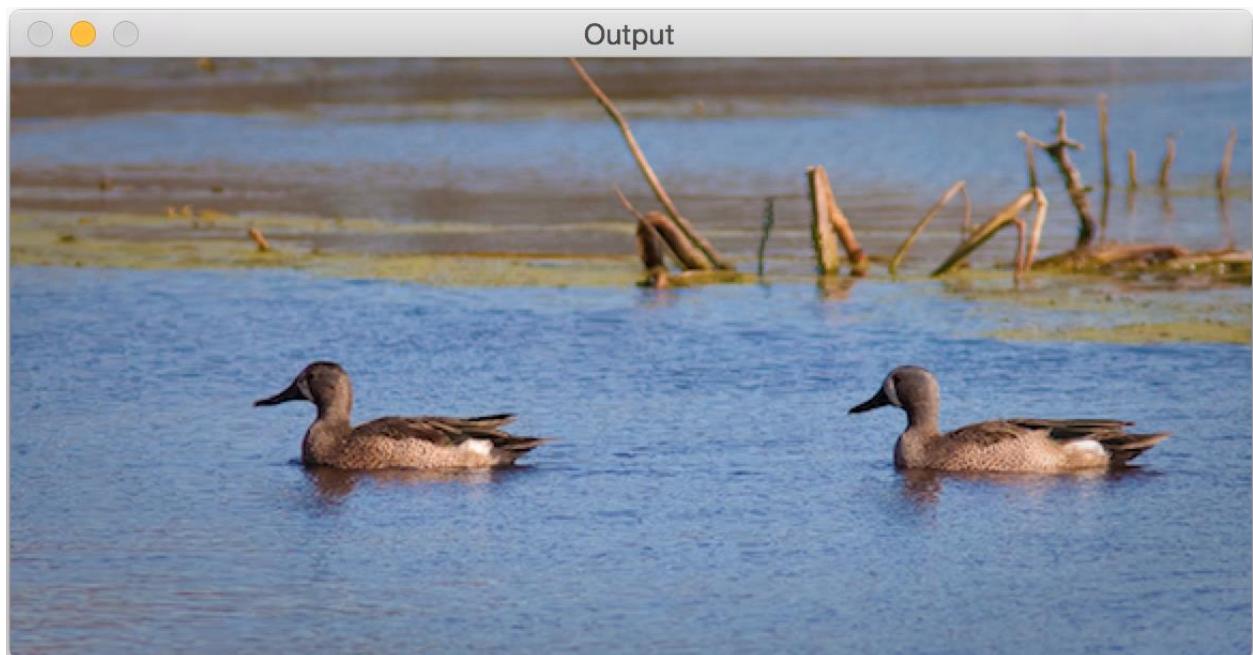


Interesting regions



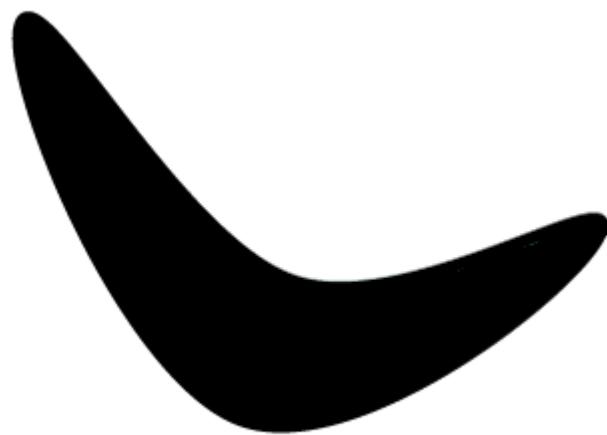
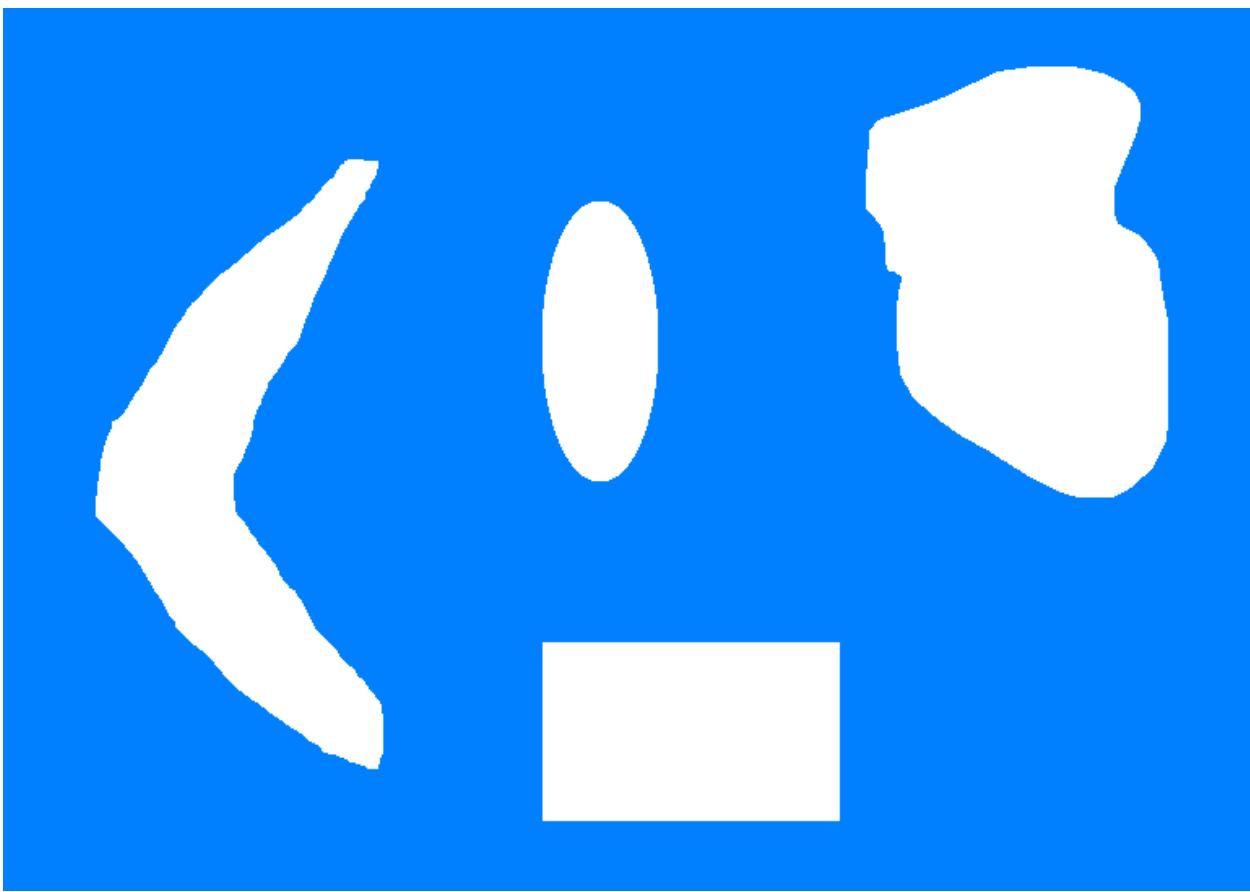
Uninteresting regions

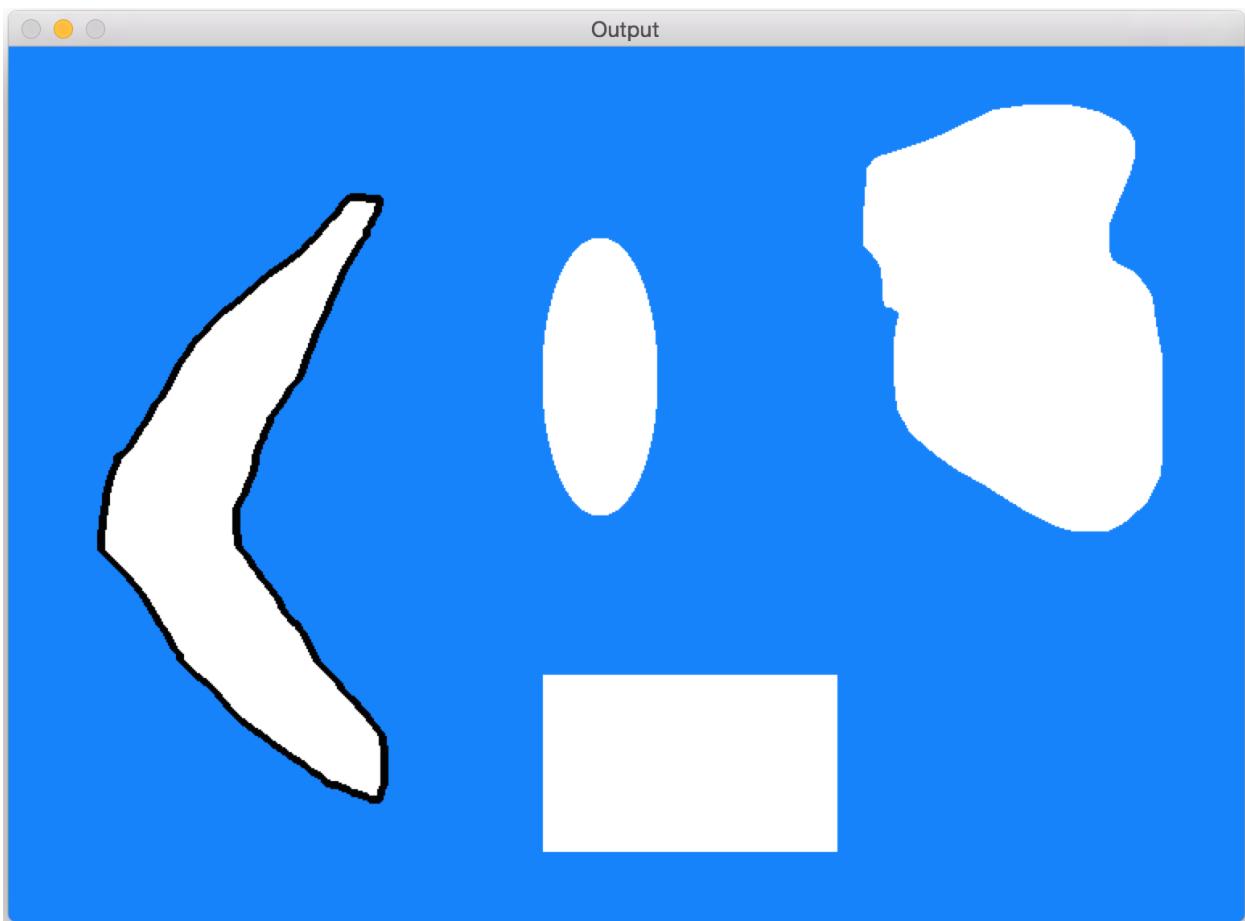


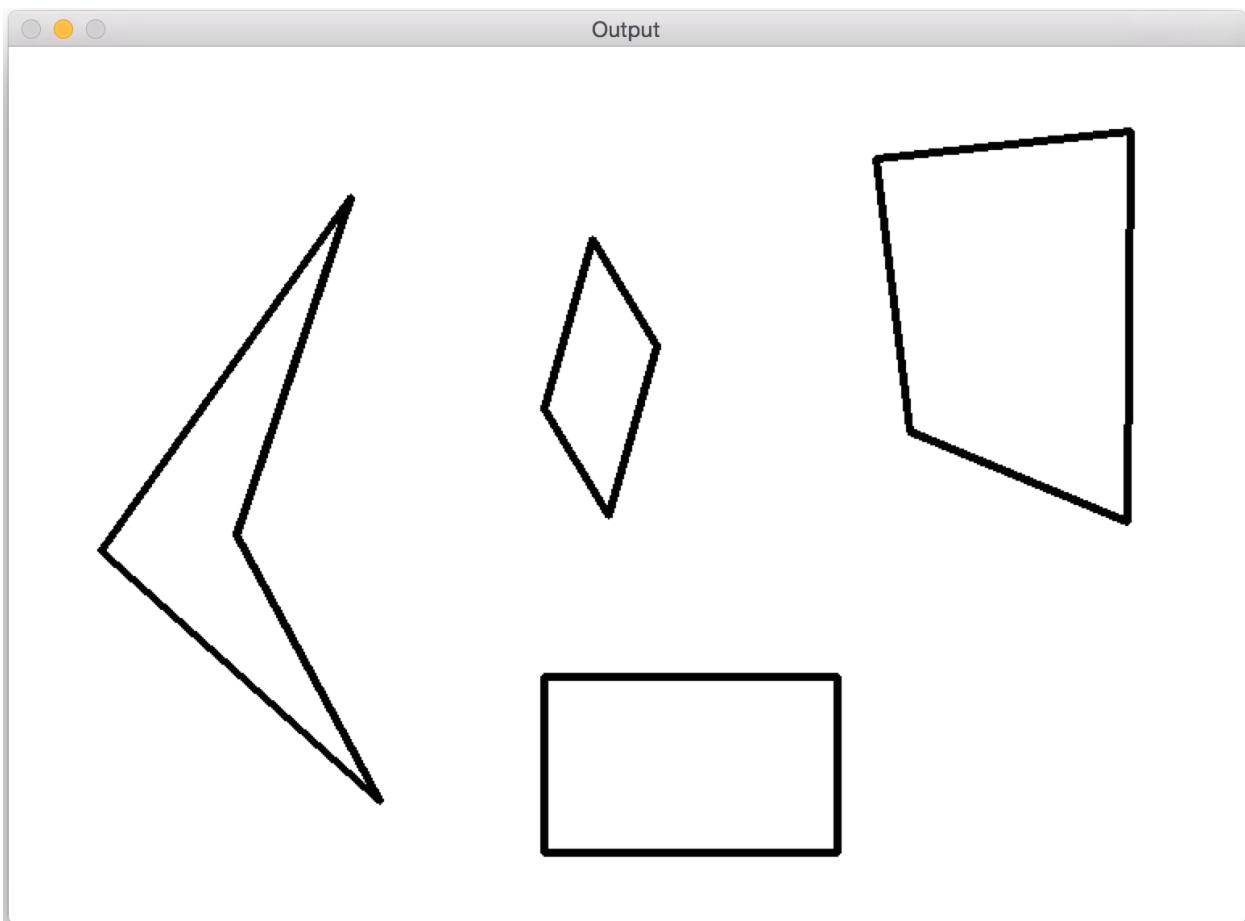


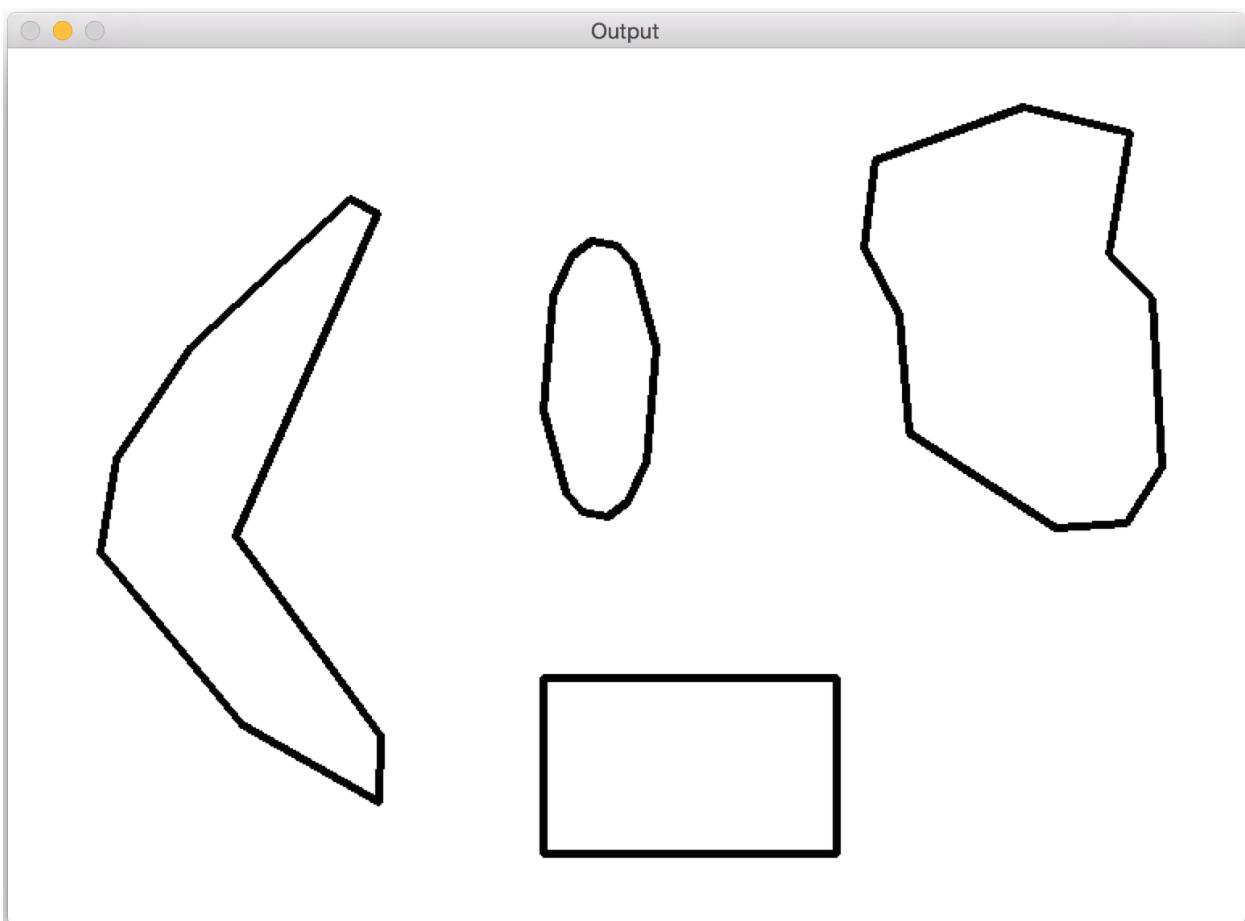


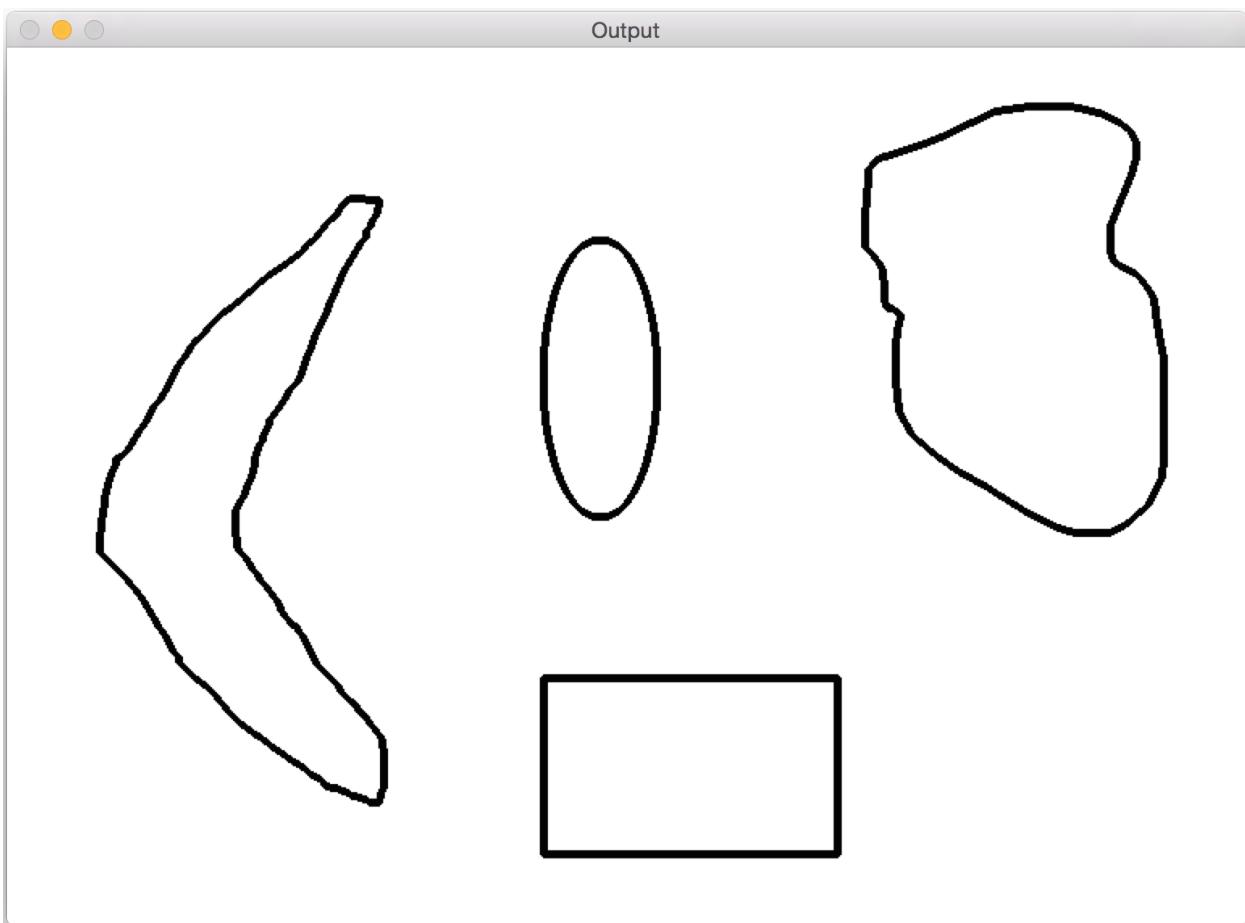
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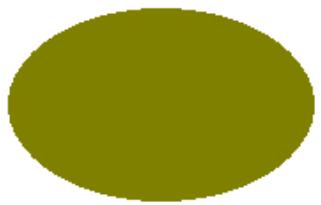
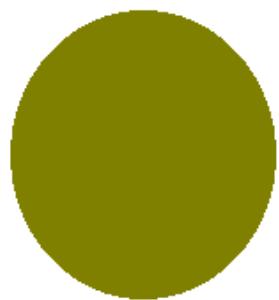


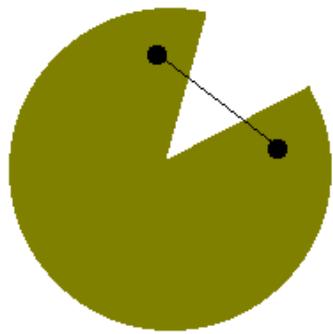
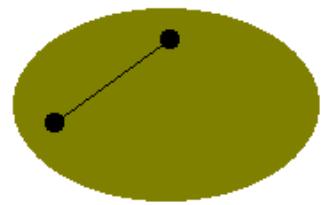
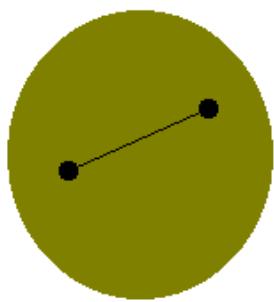


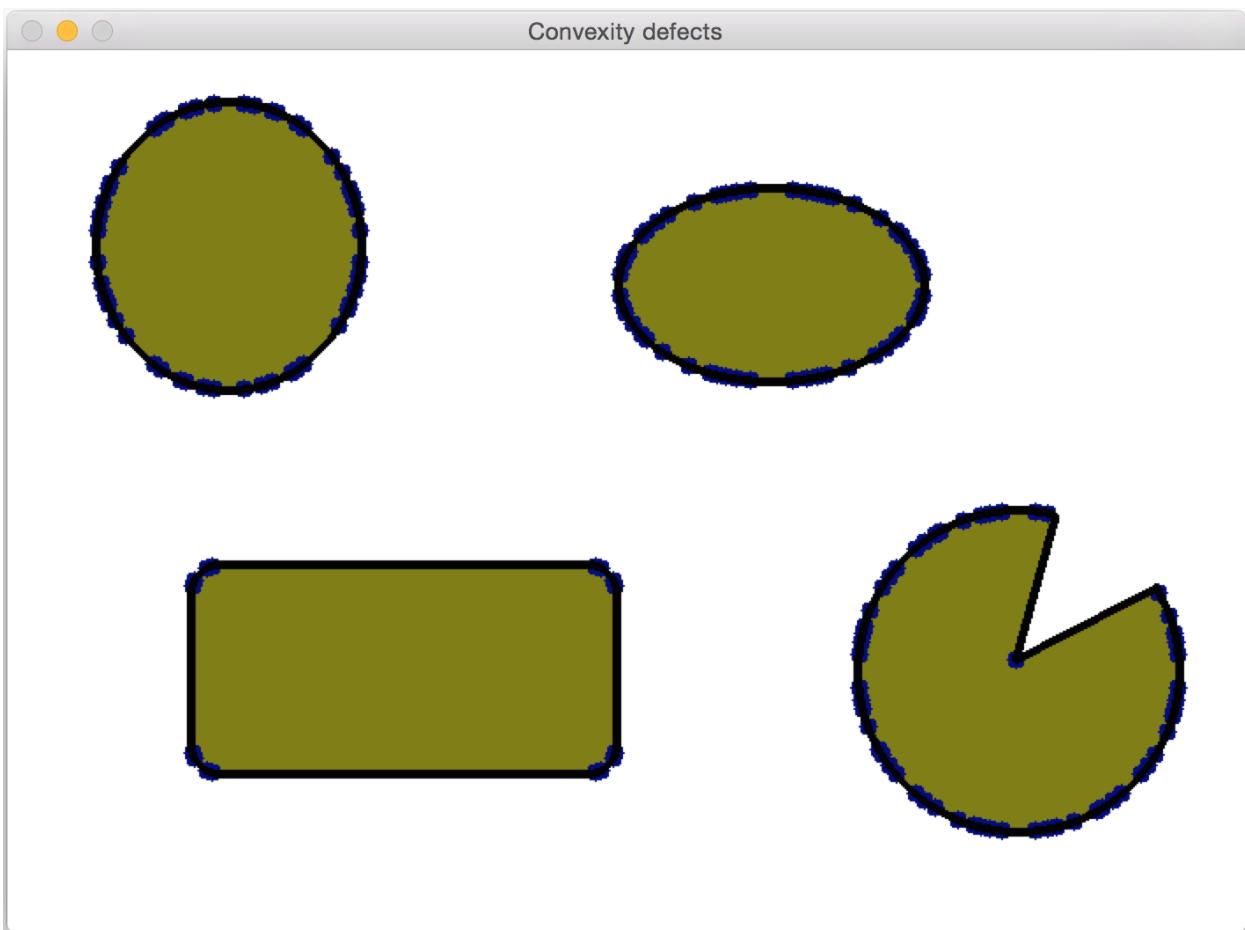


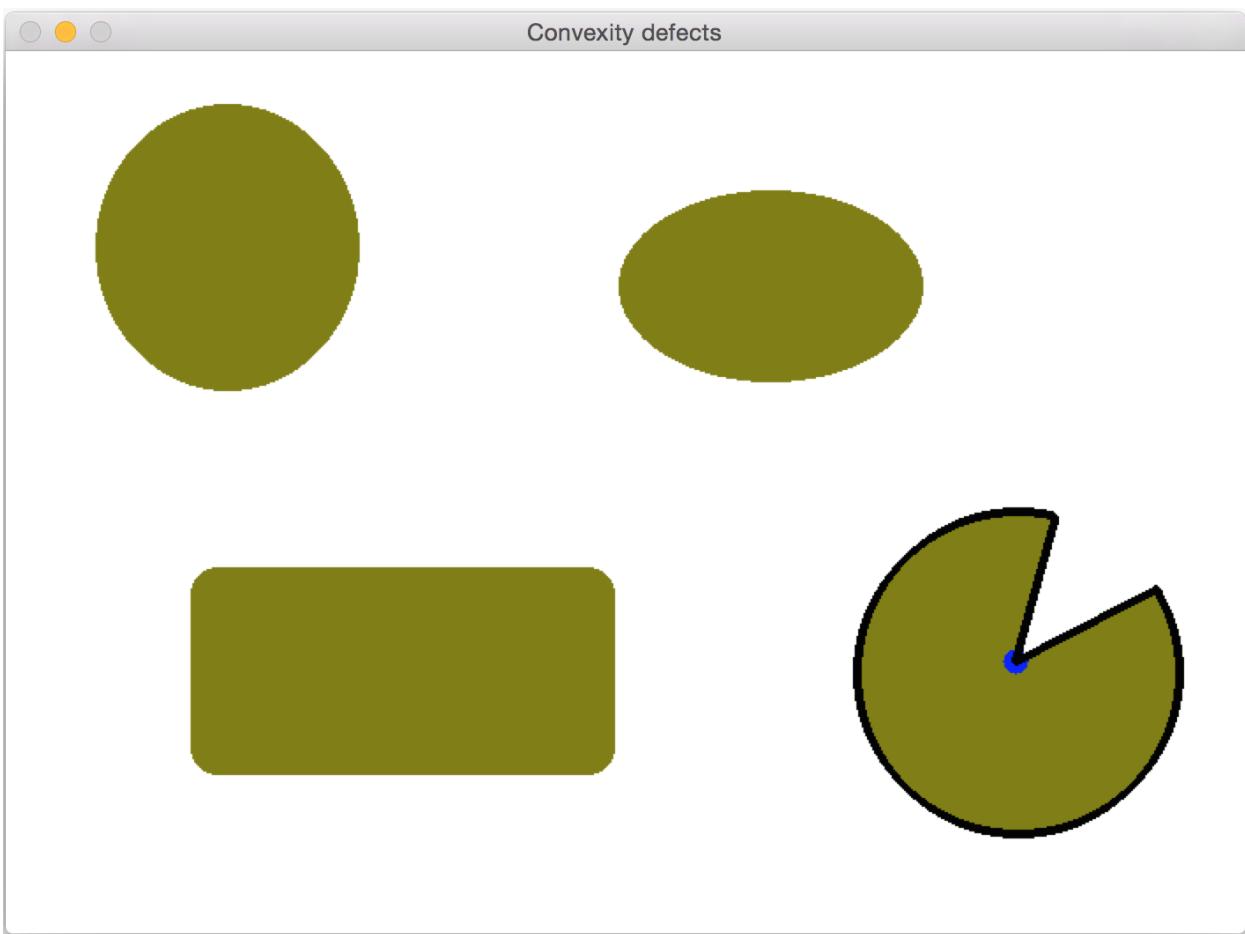


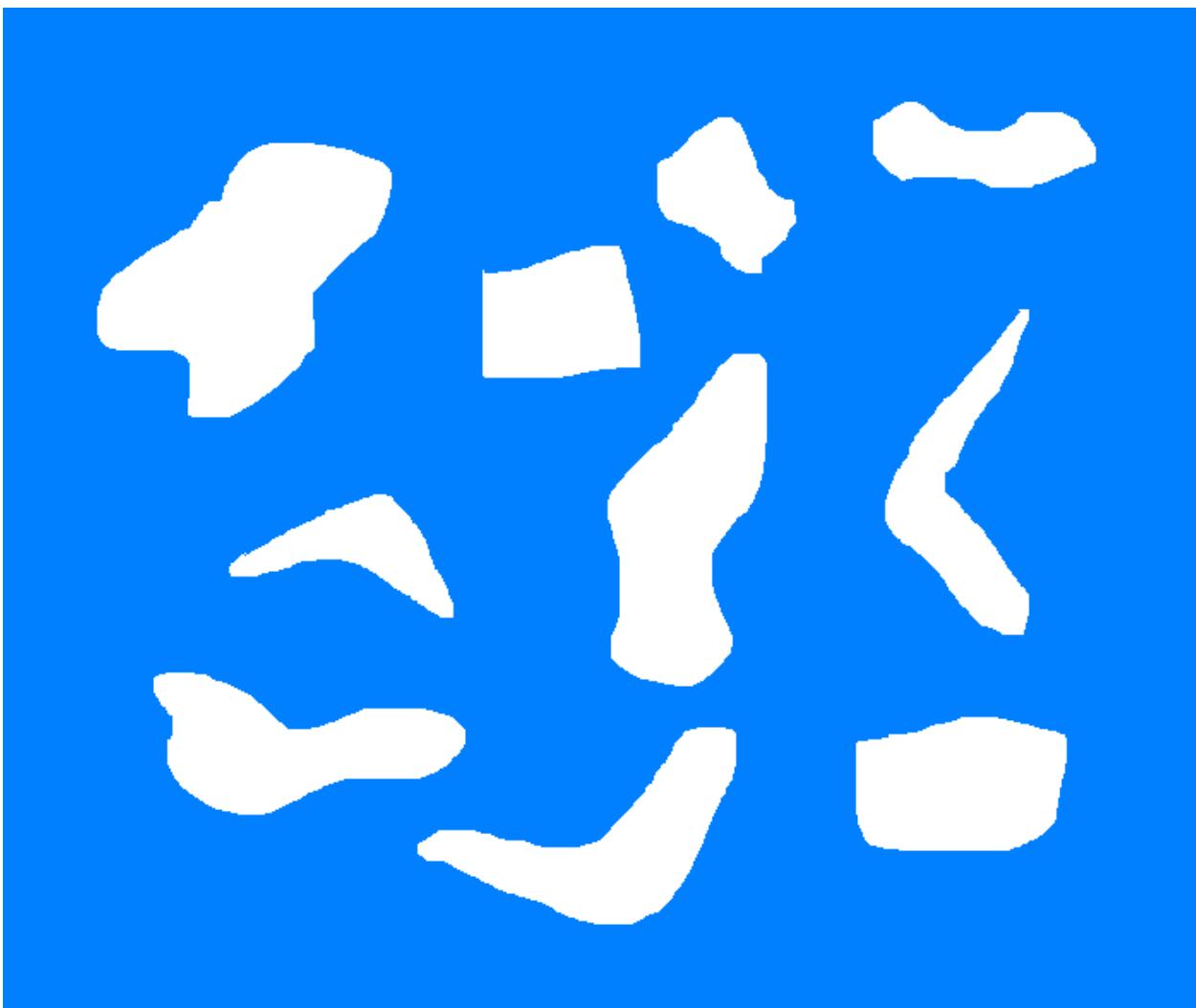


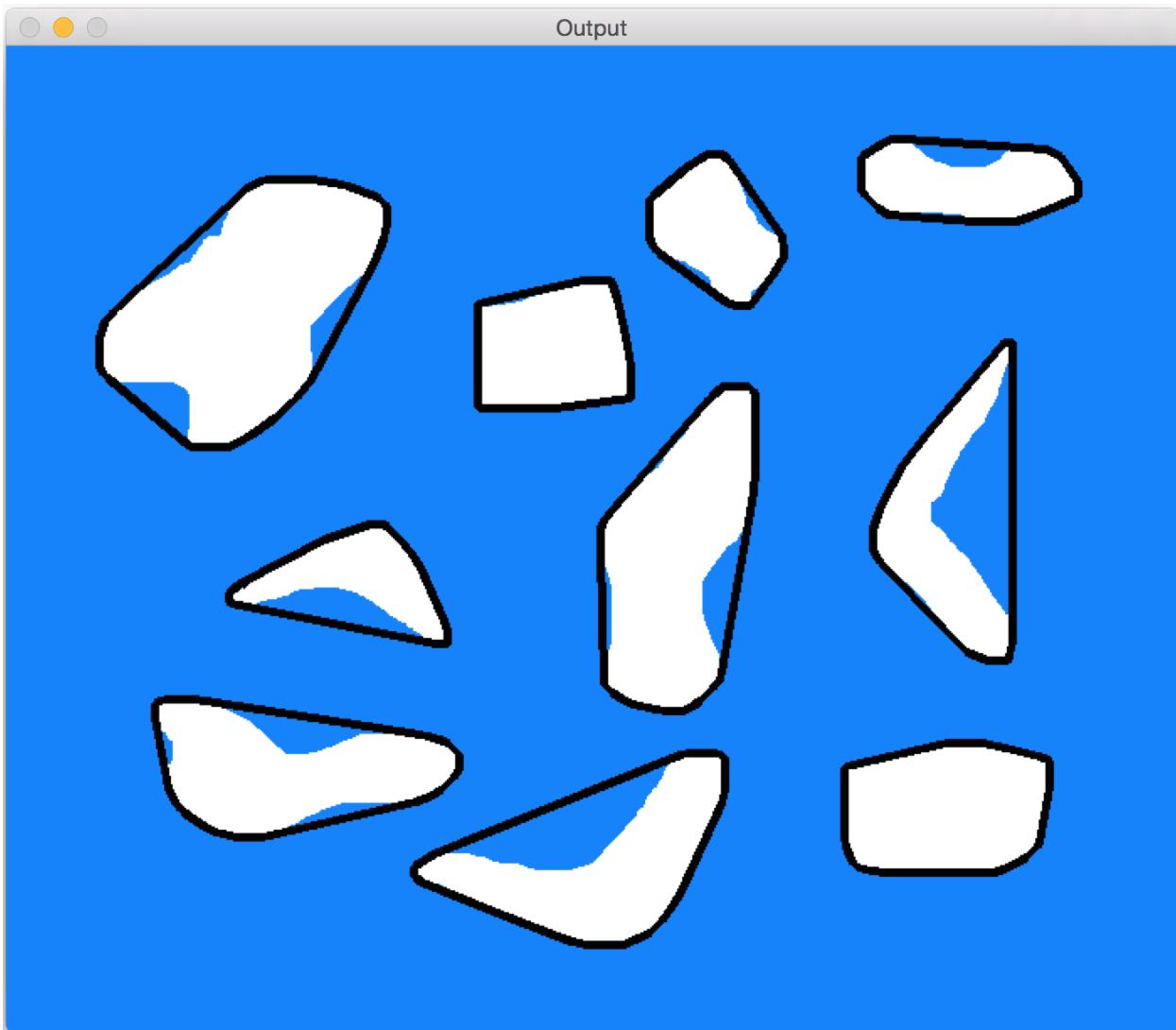


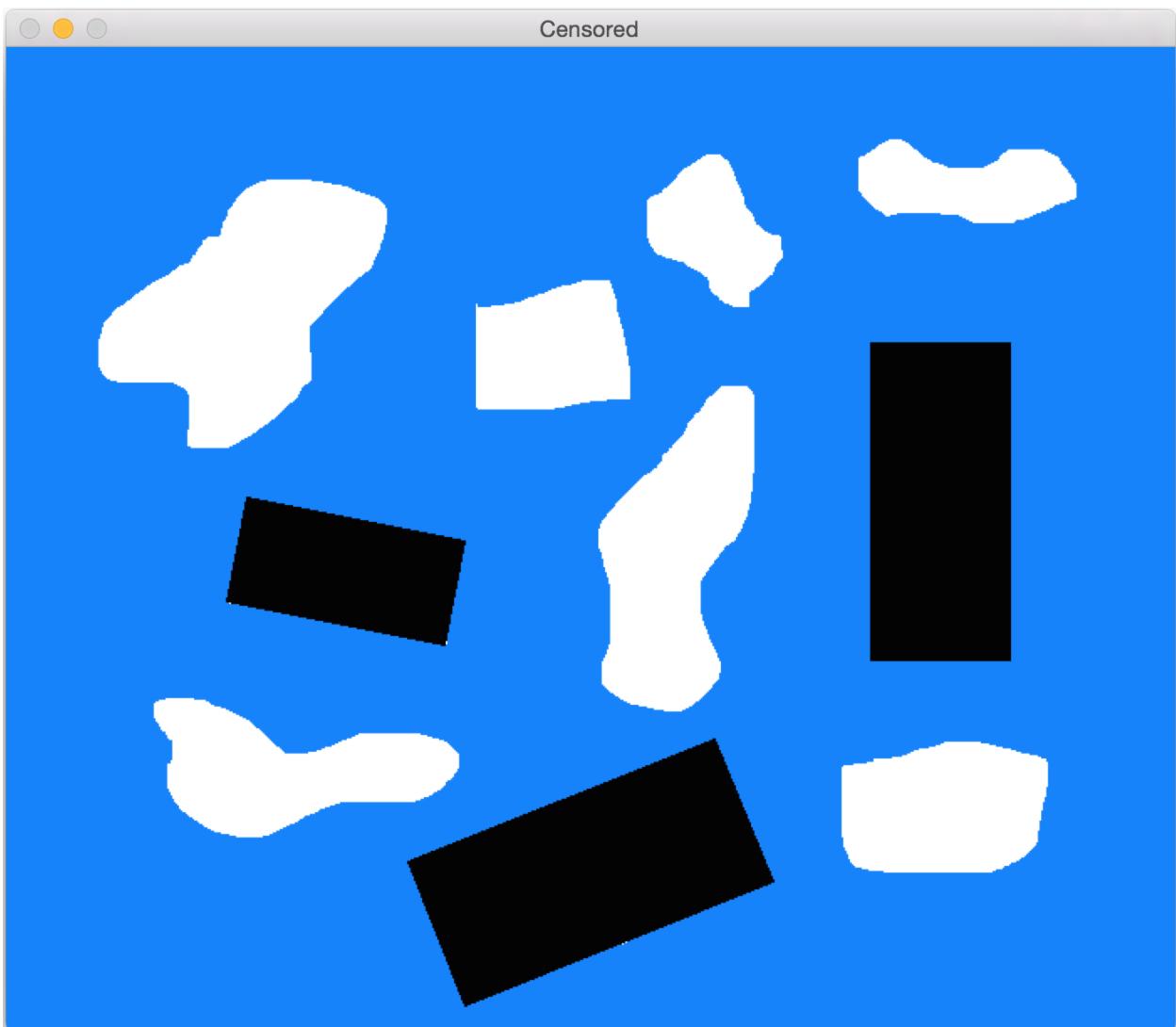




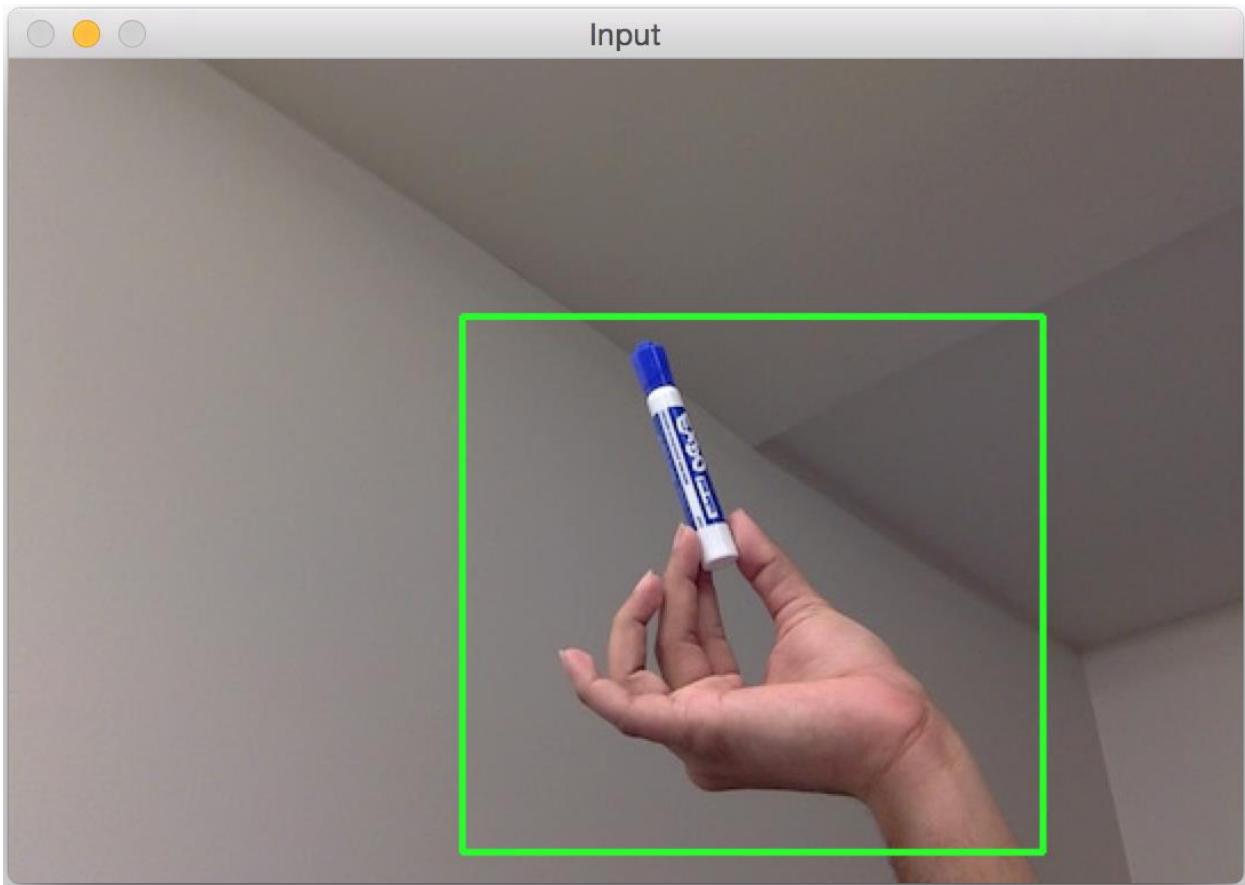


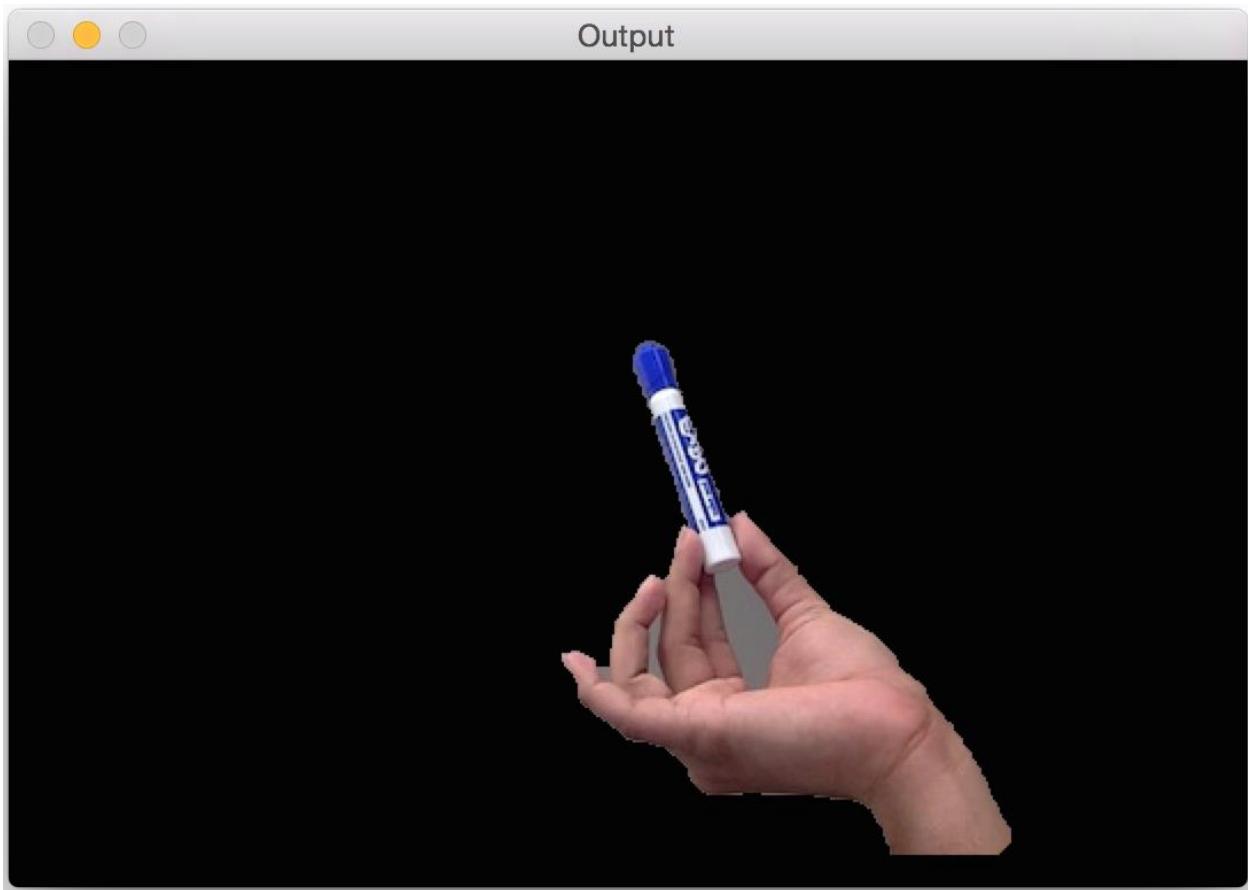


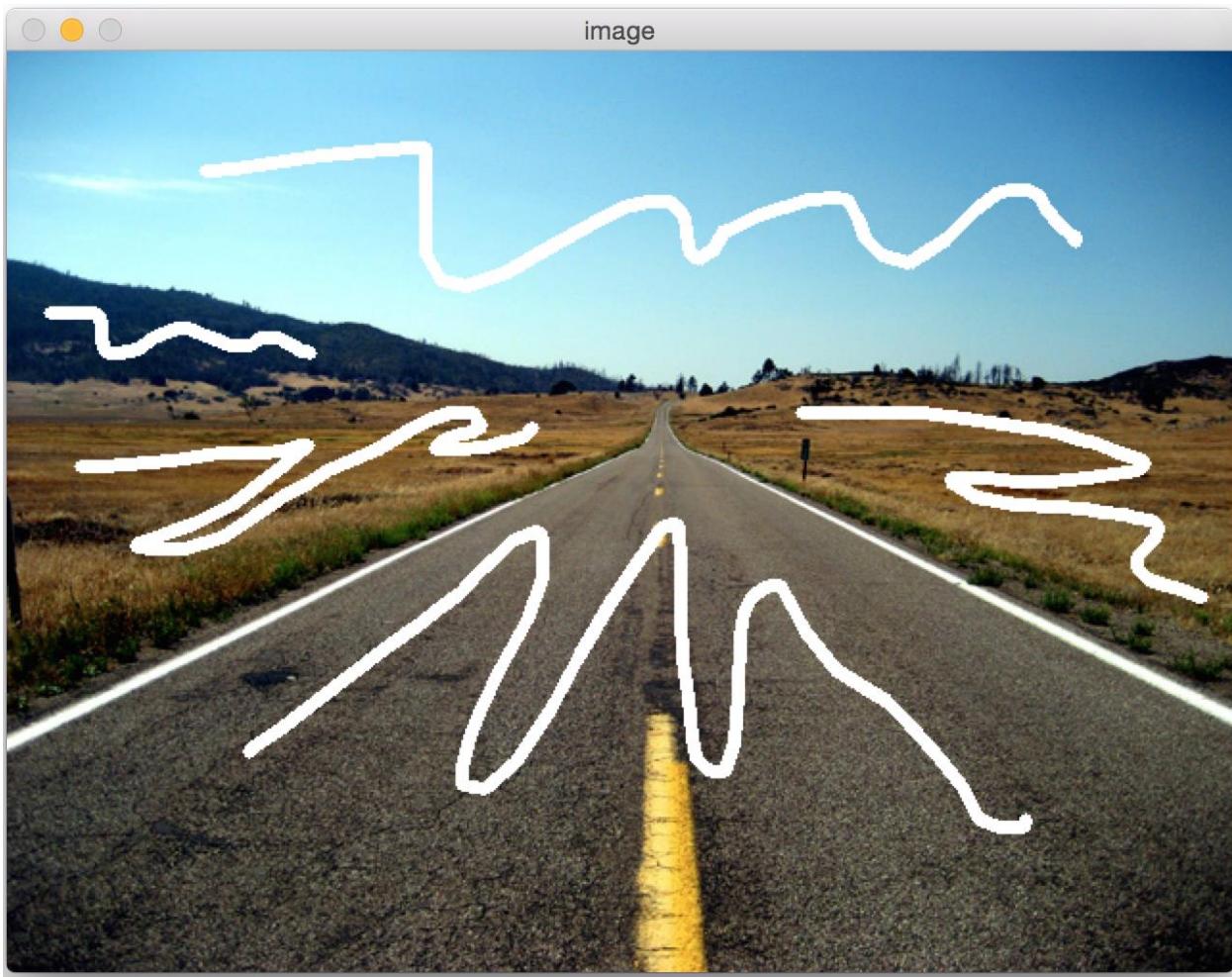










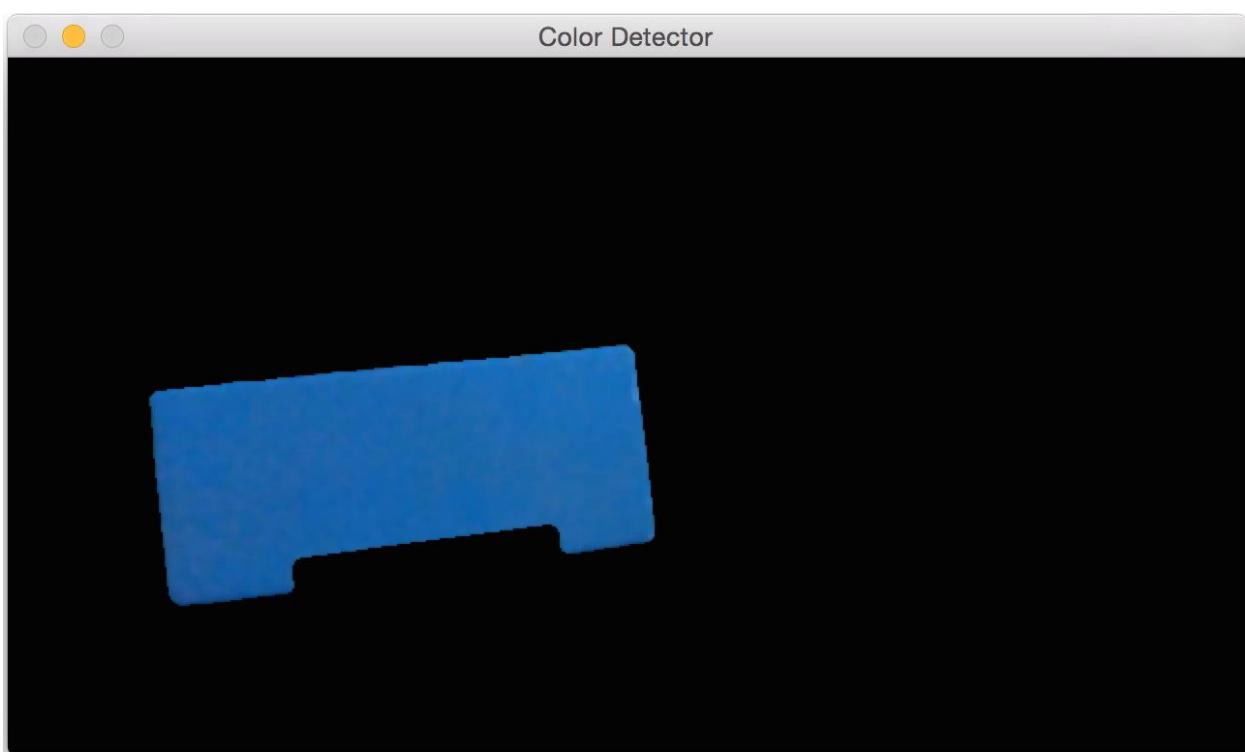




$$I = \sum_{i=0}^N w_i p_i^k$$

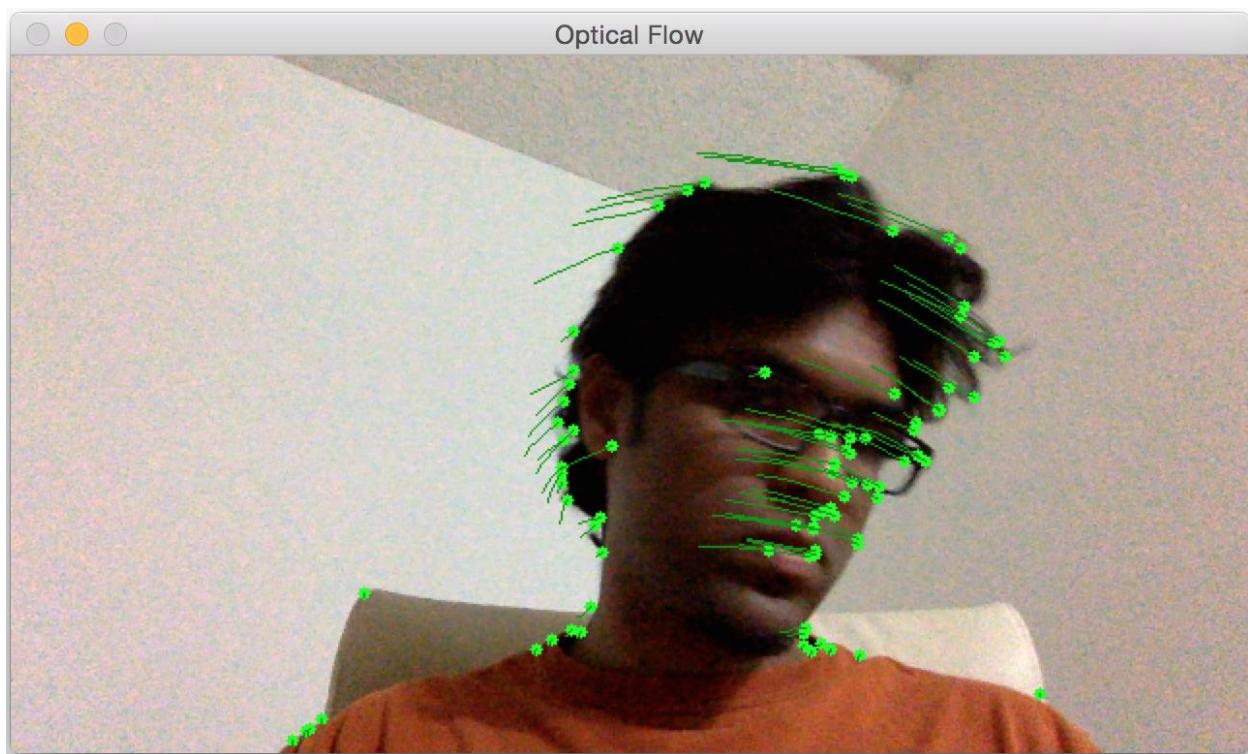
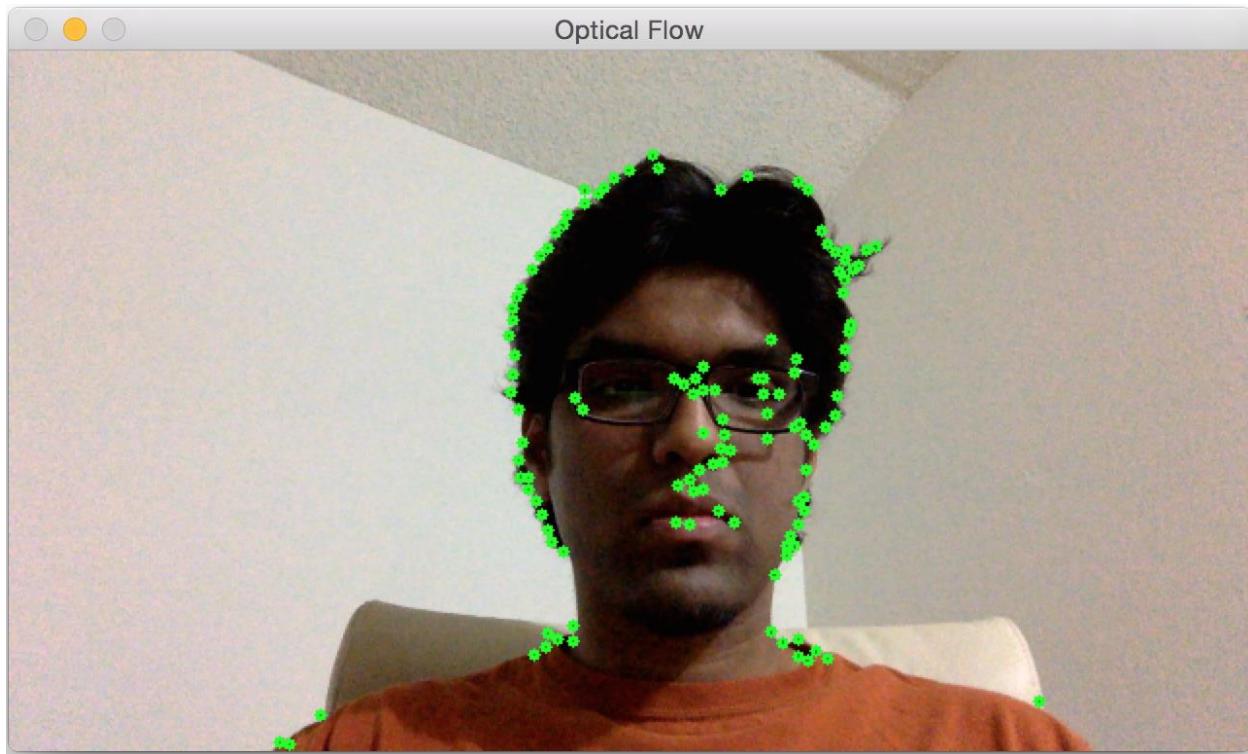
## Chapter 9

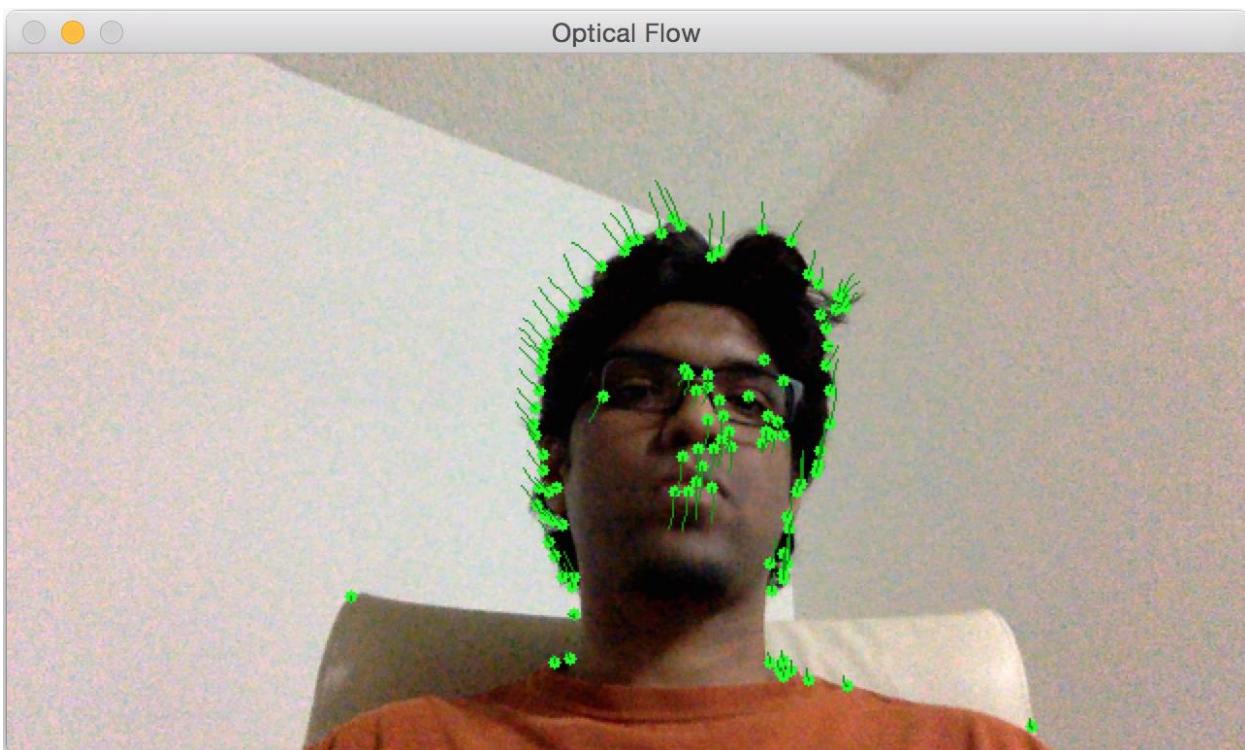


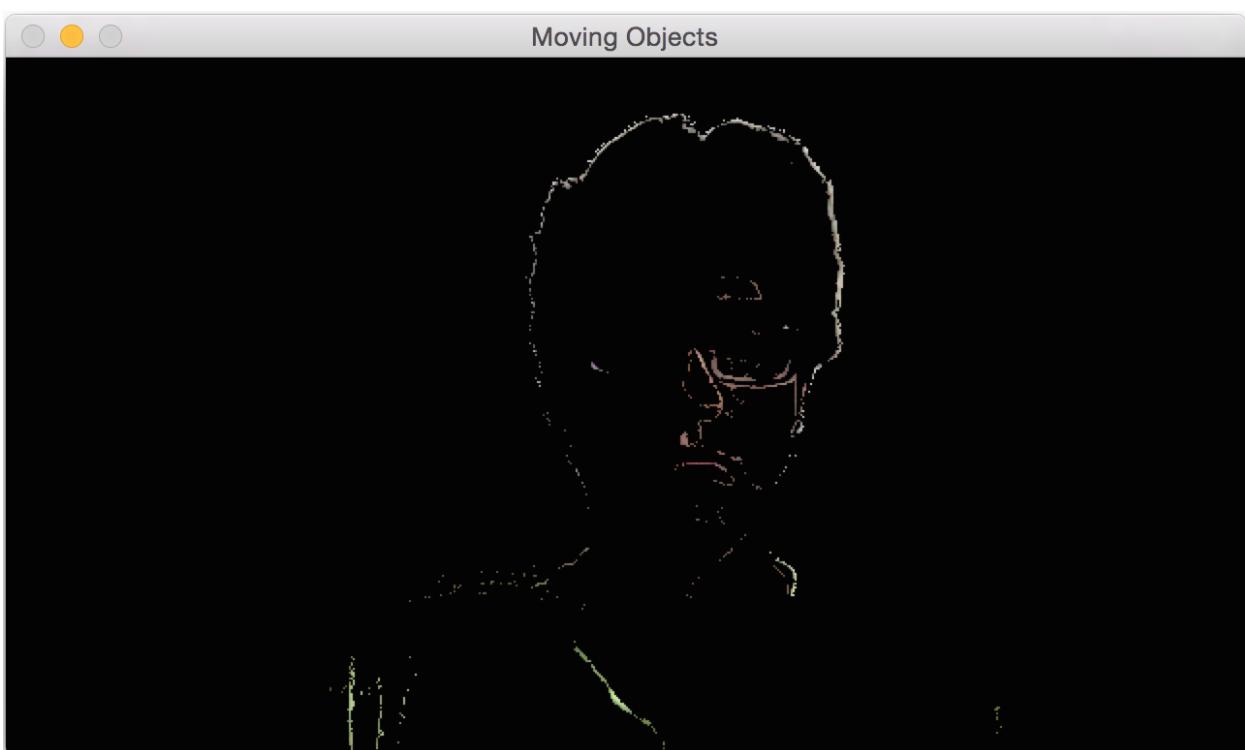






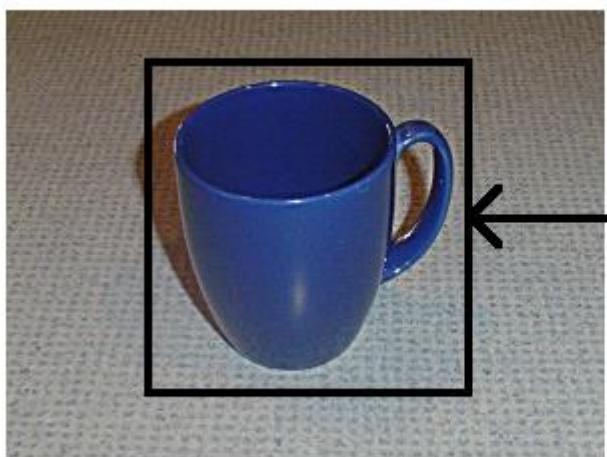








## Chapter 10

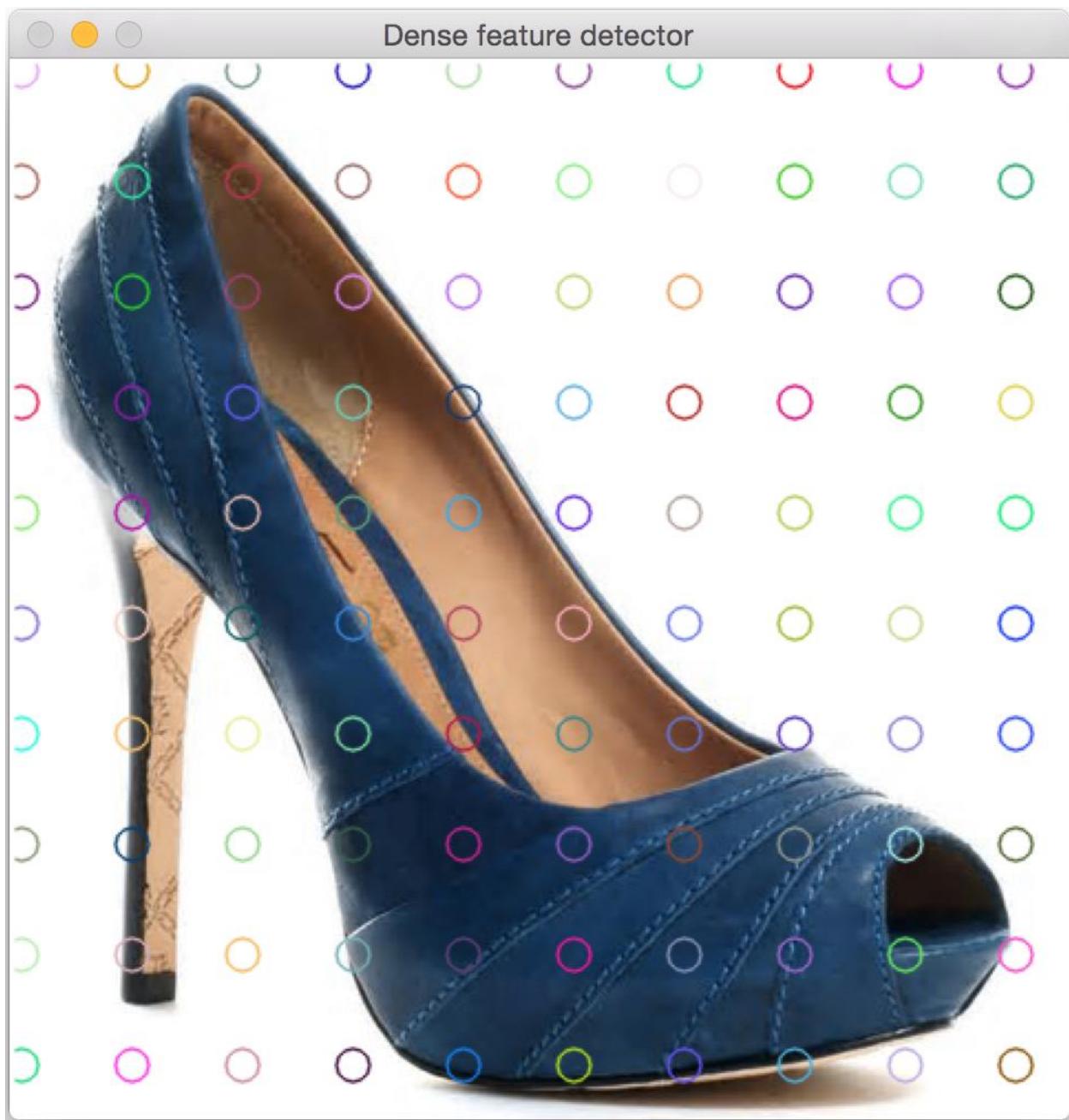


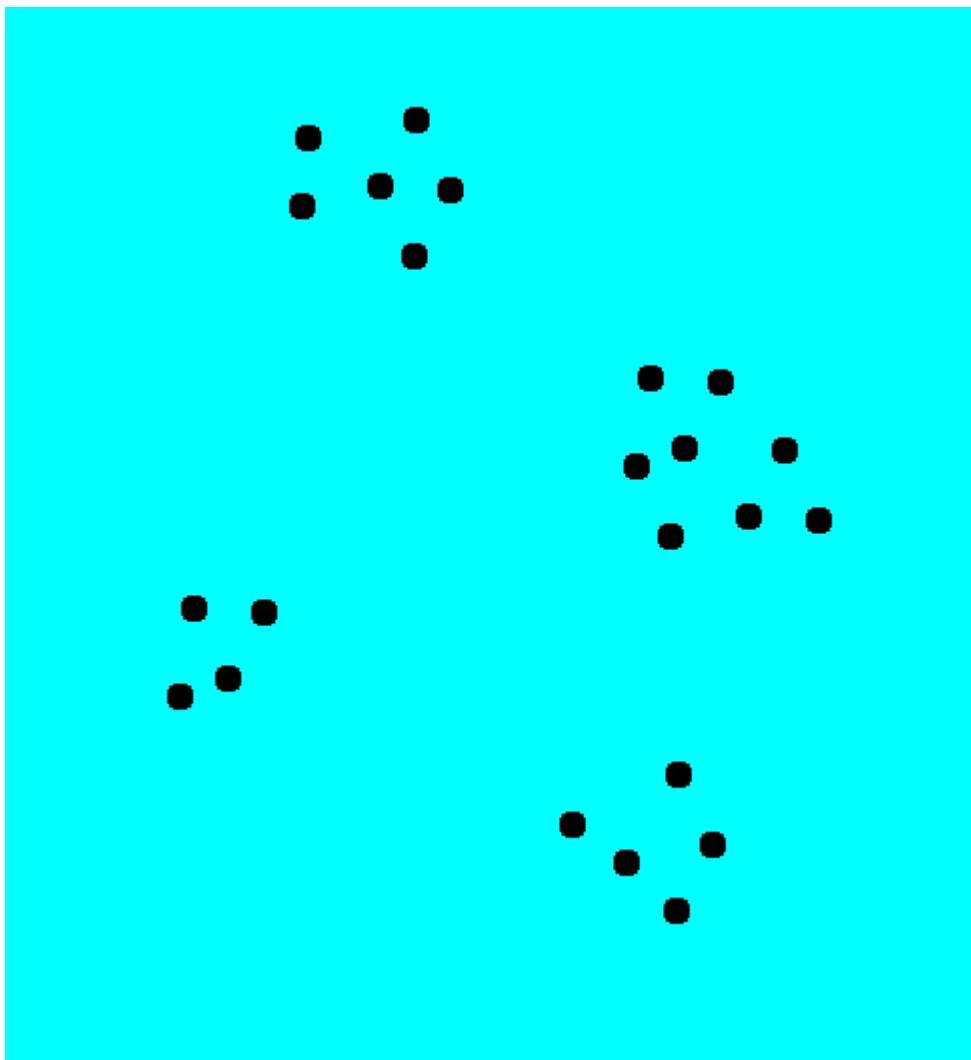
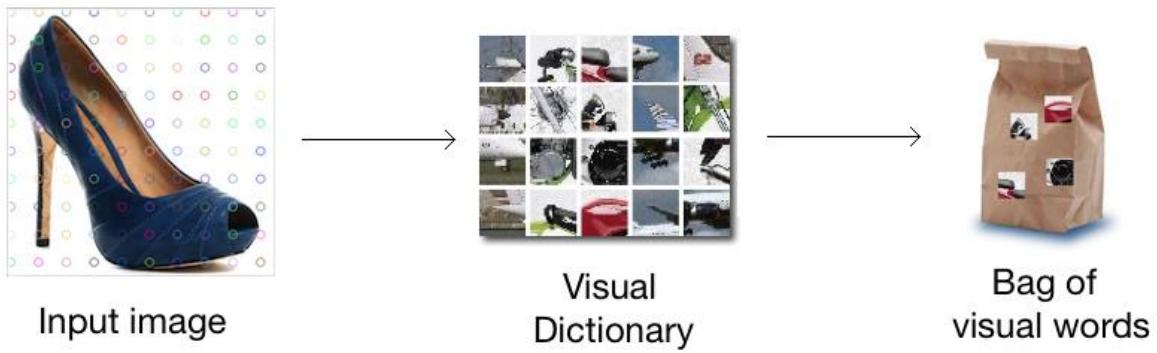
This is a  
blue mug

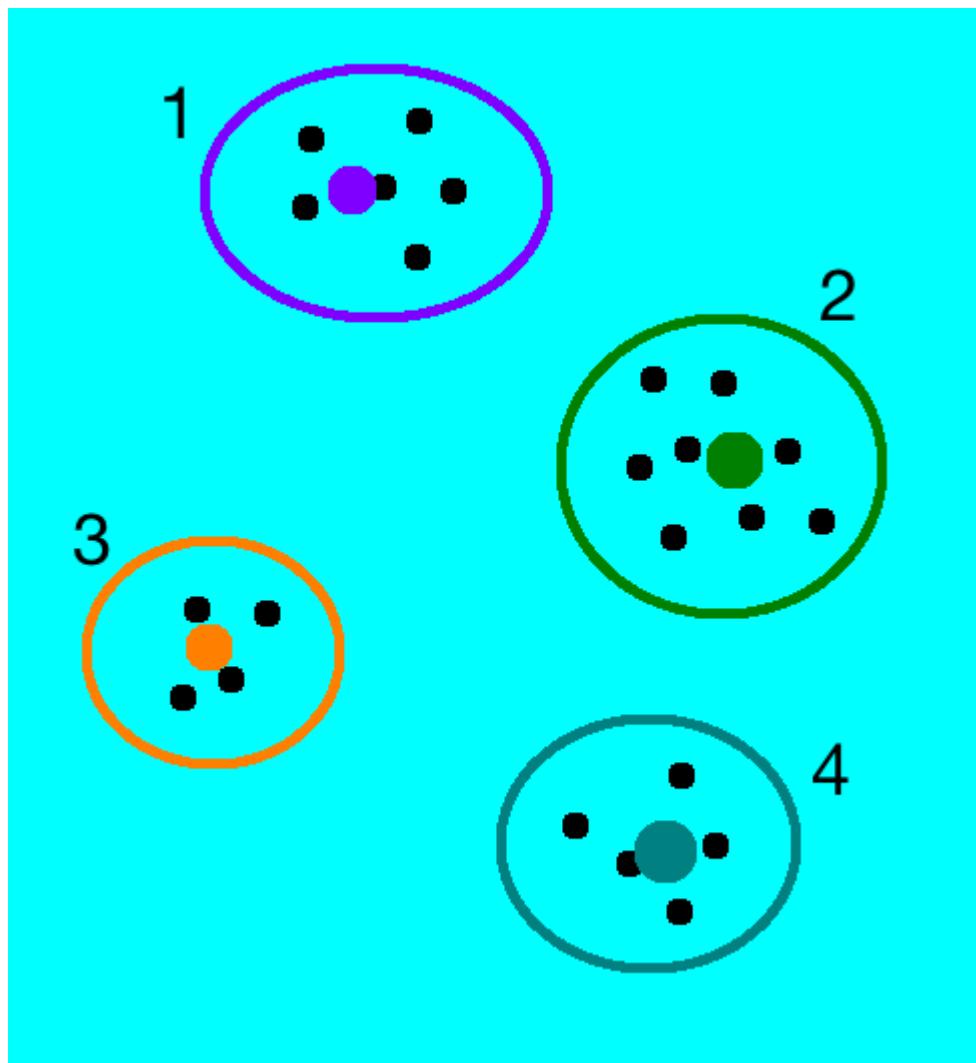


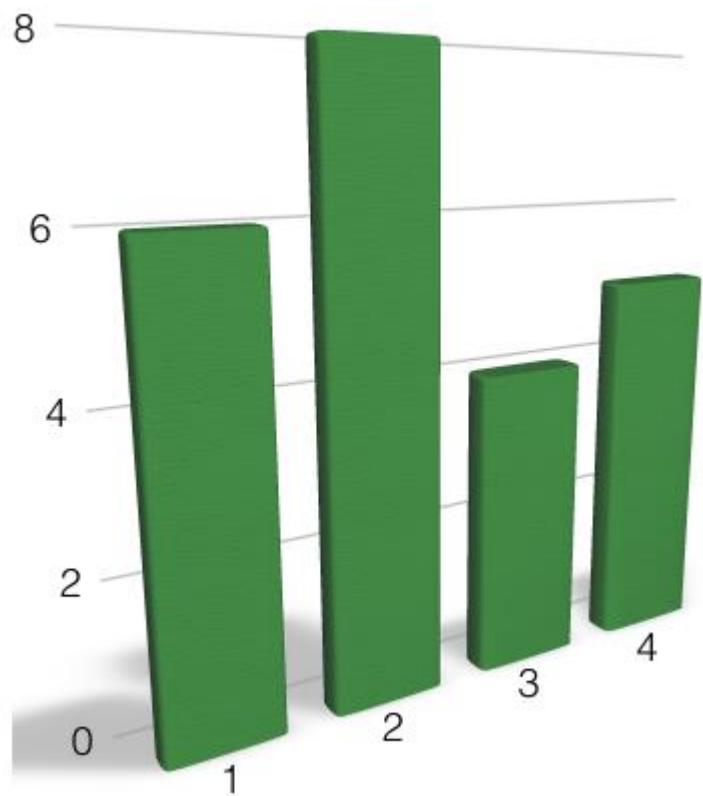


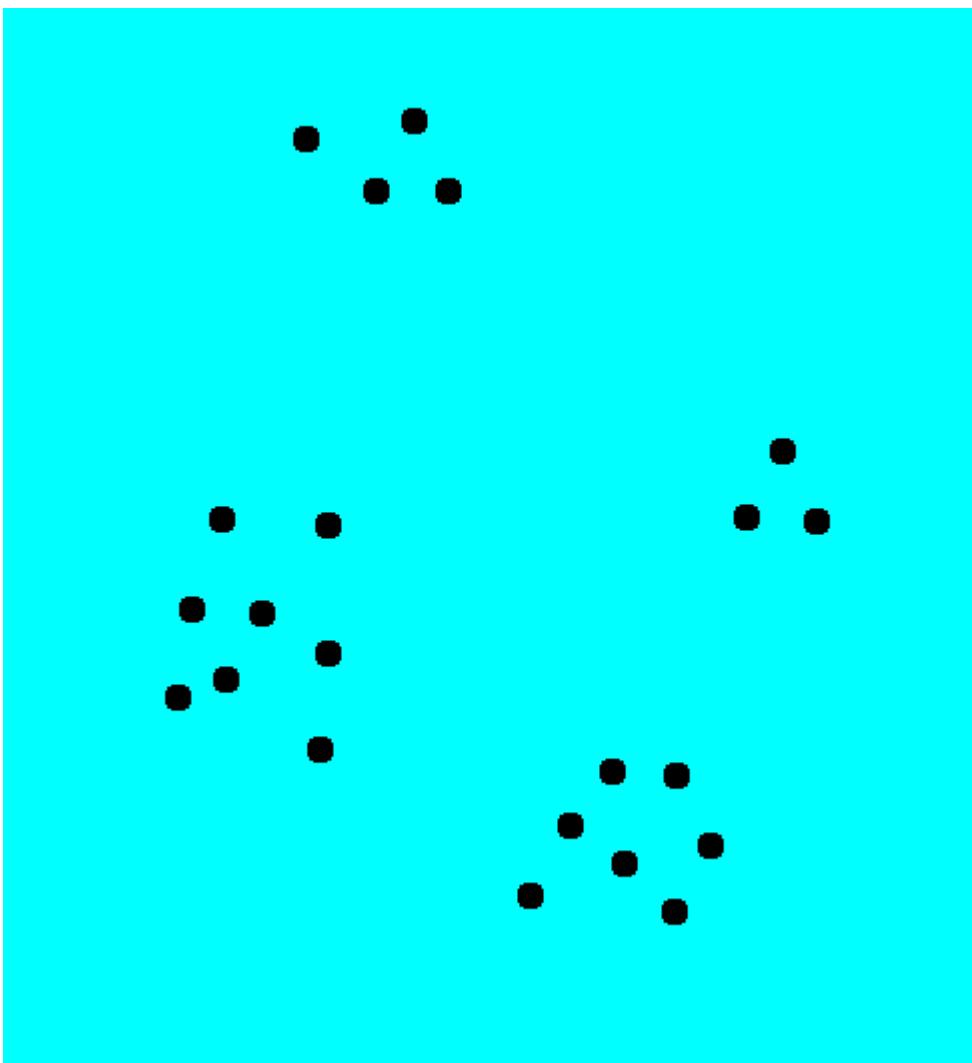


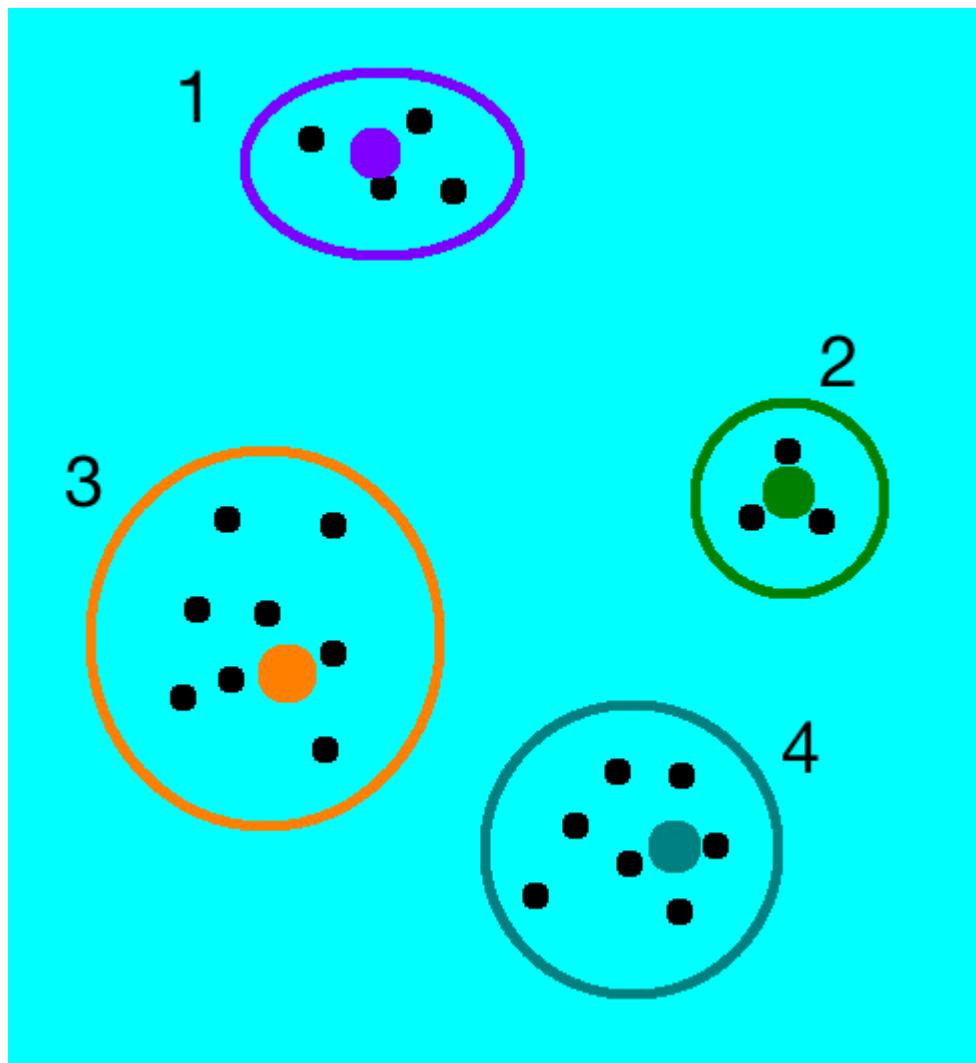


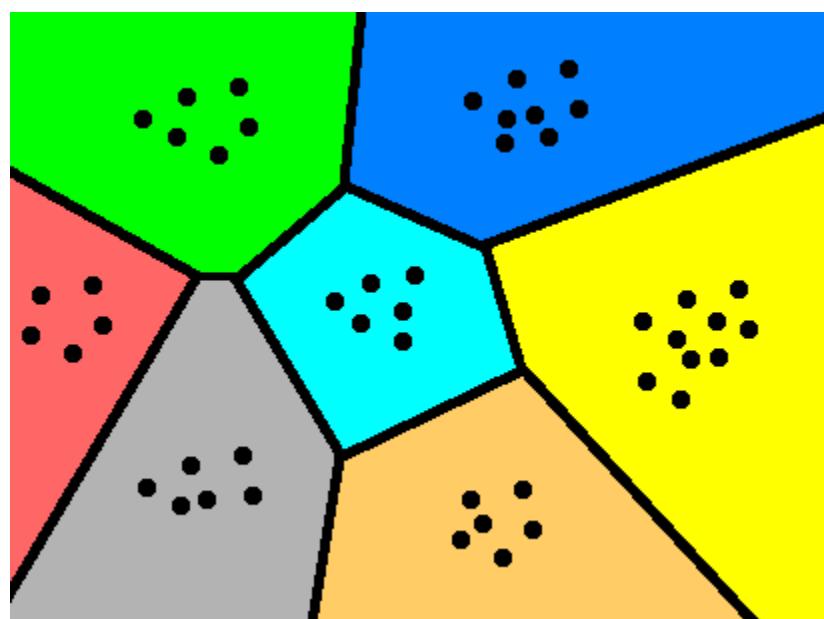
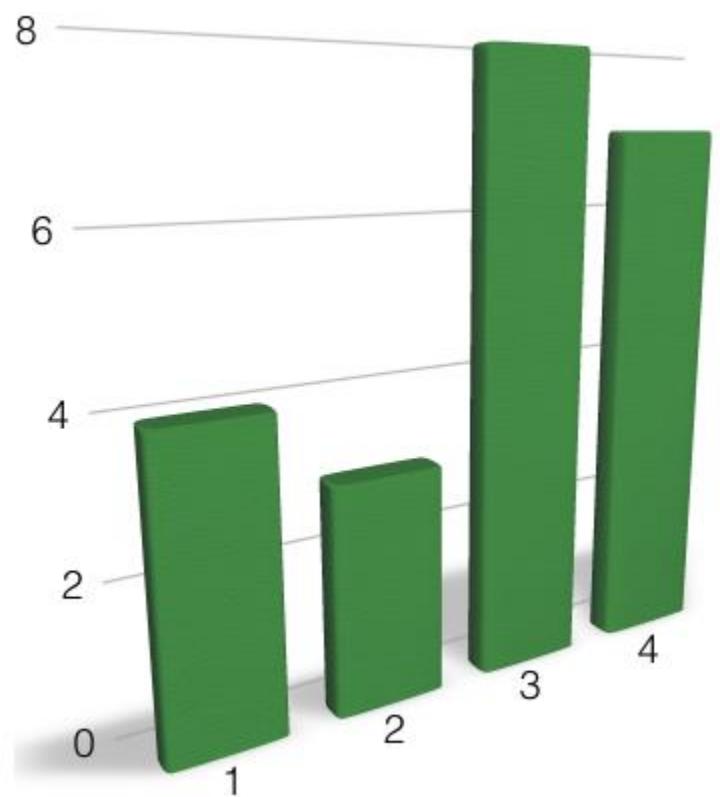


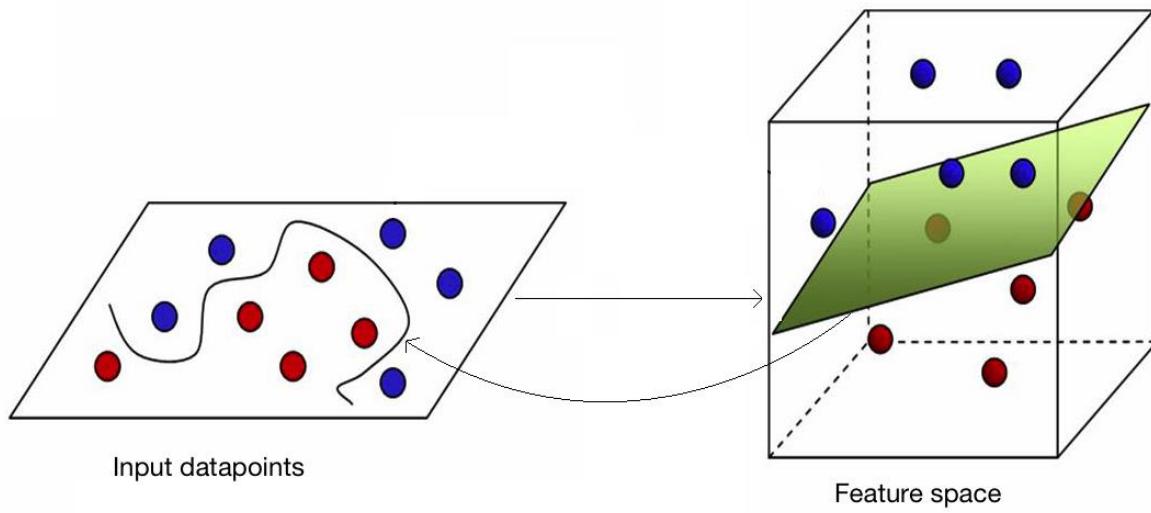
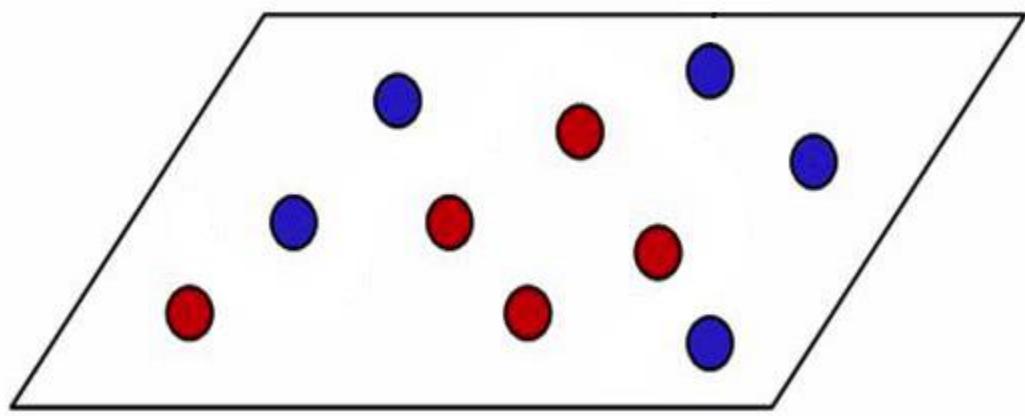








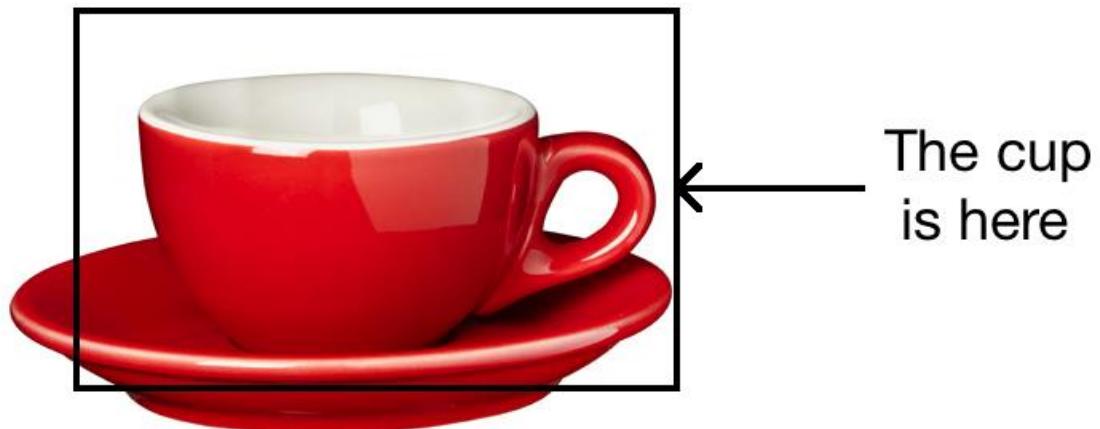




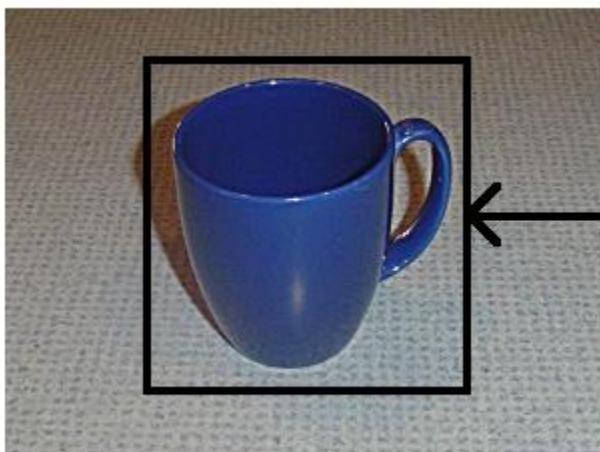








The cup  
is here



The cup  
is here

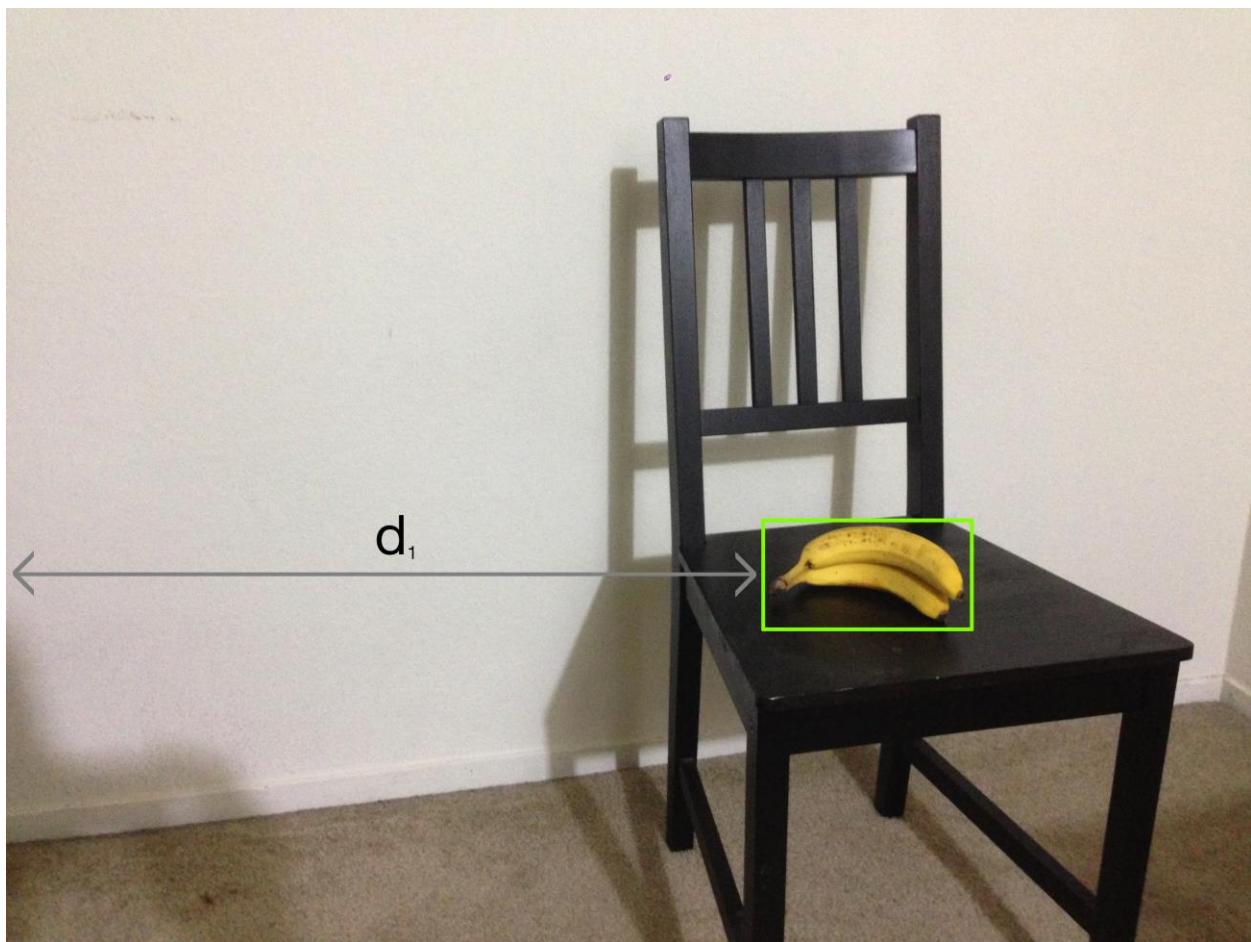


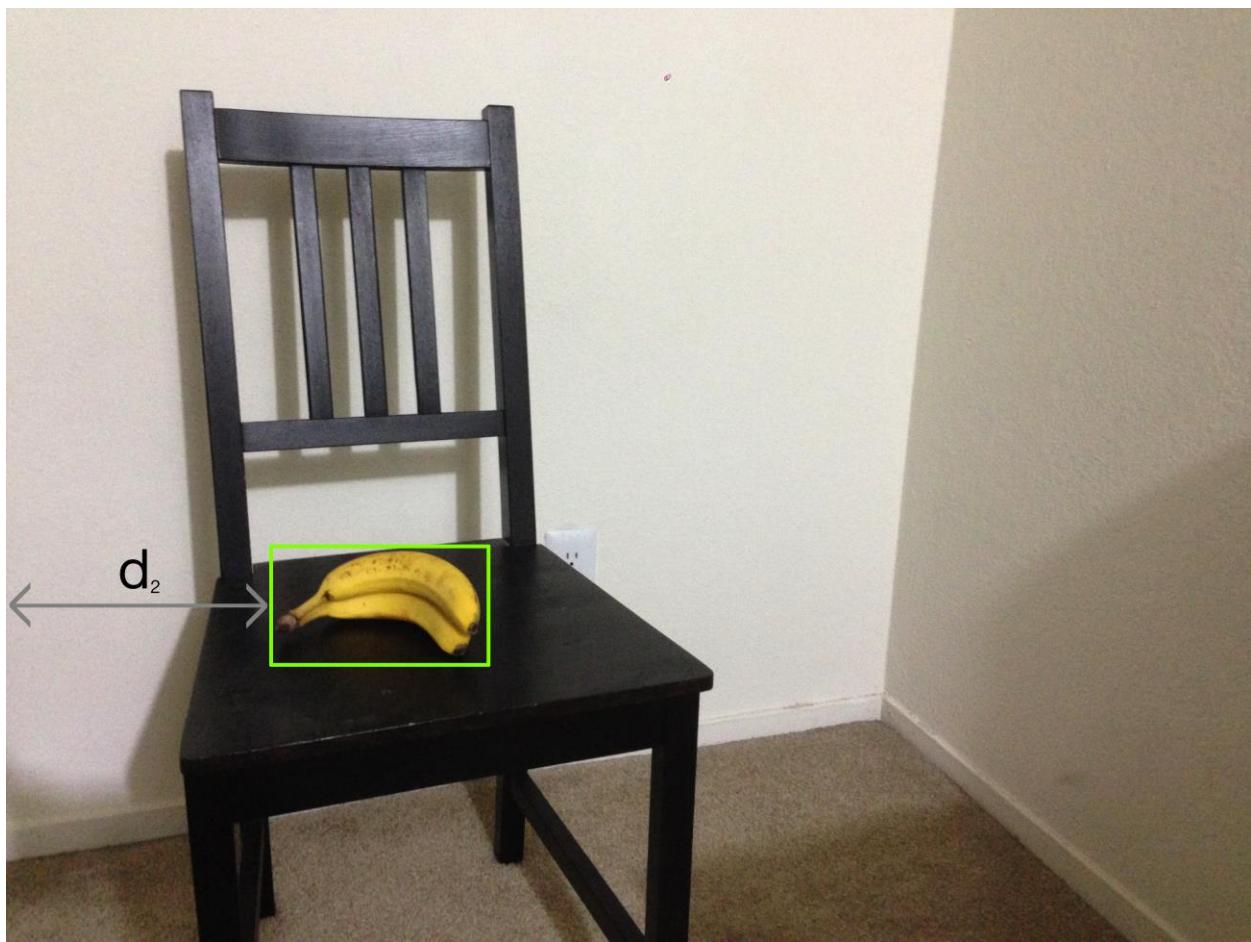
This is a red  
latte cup

## **Chapter 11**



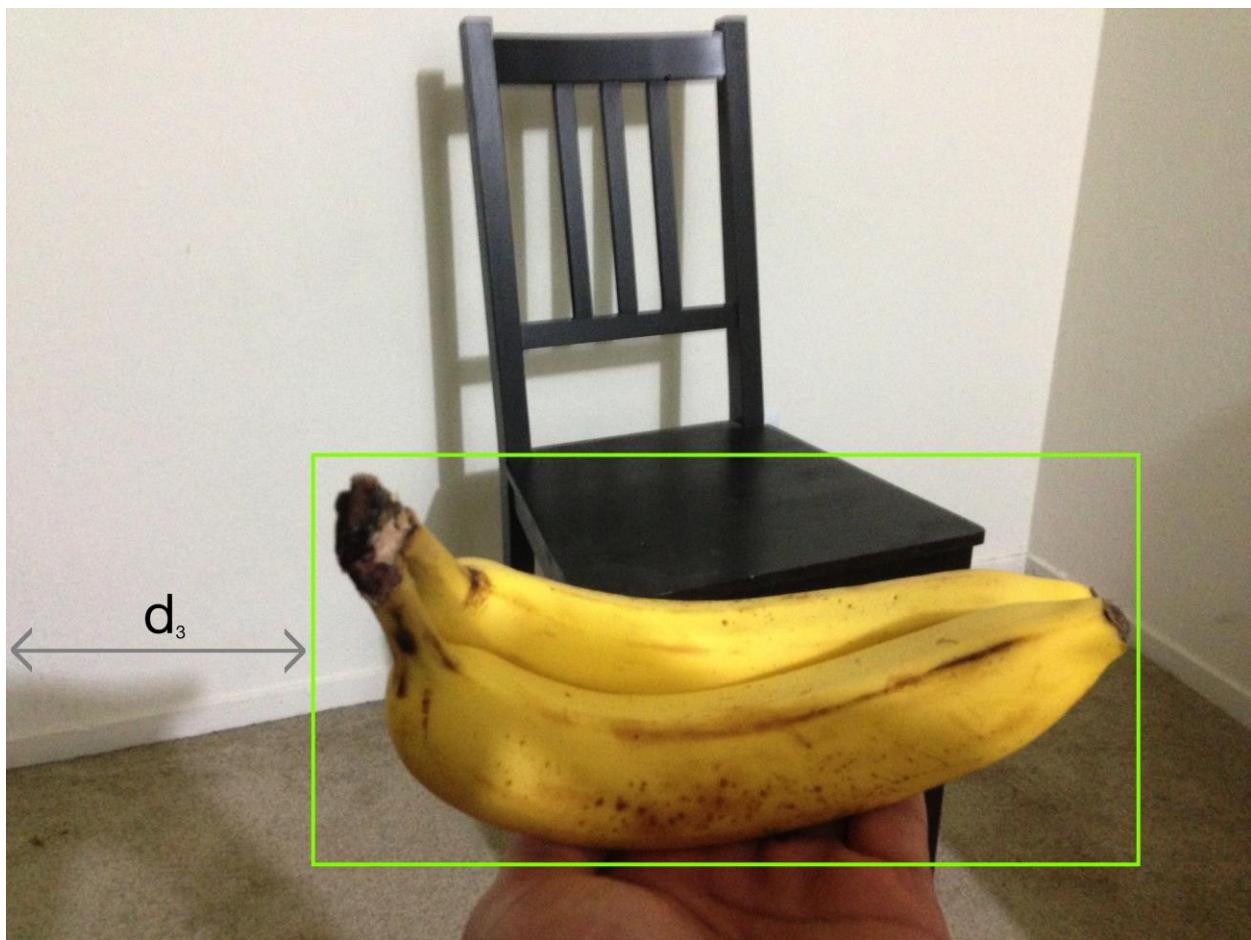


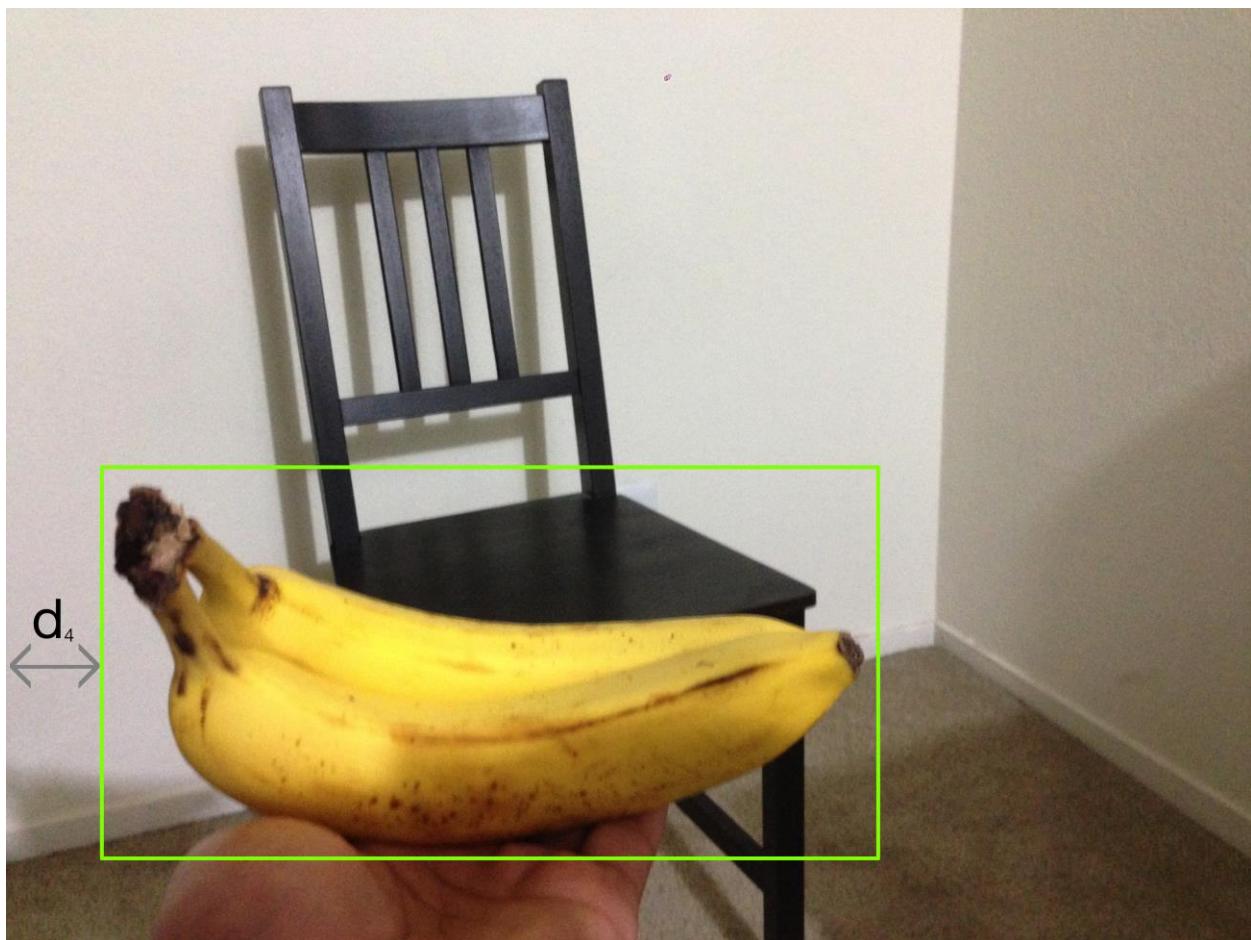


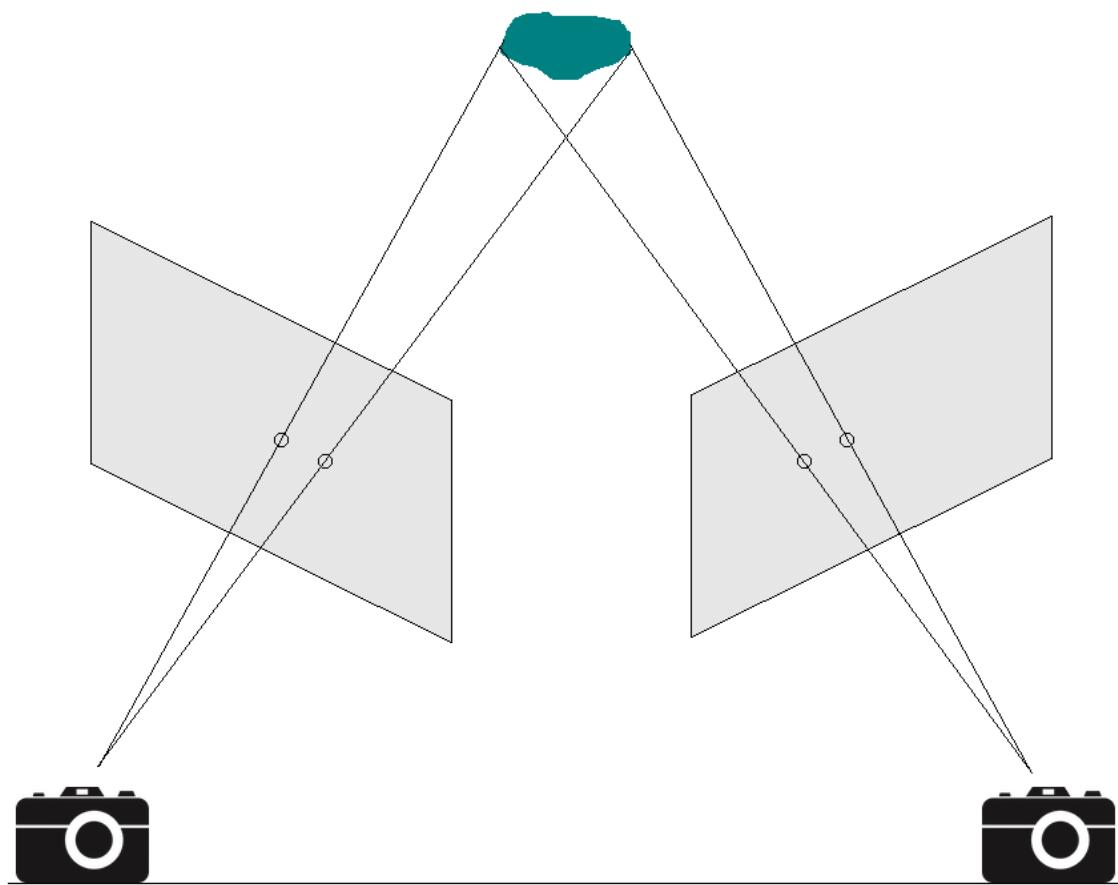


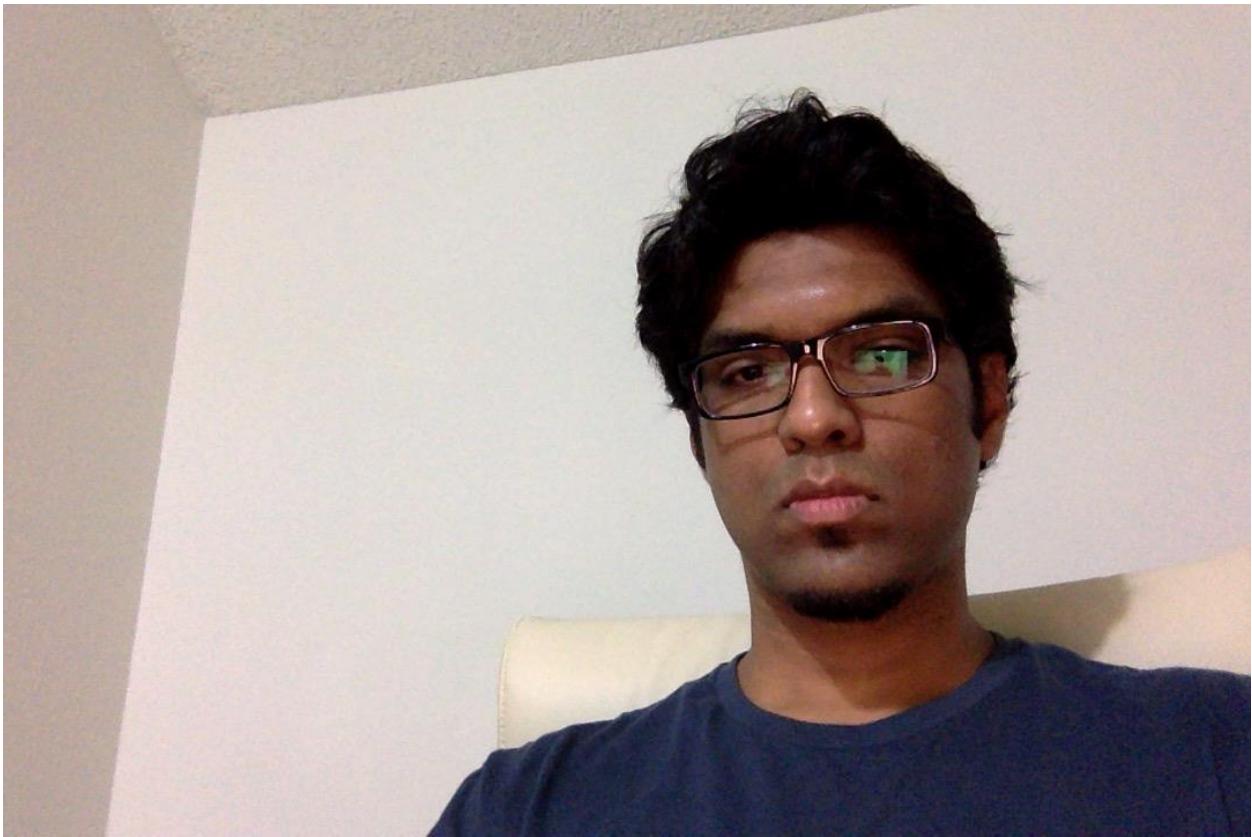


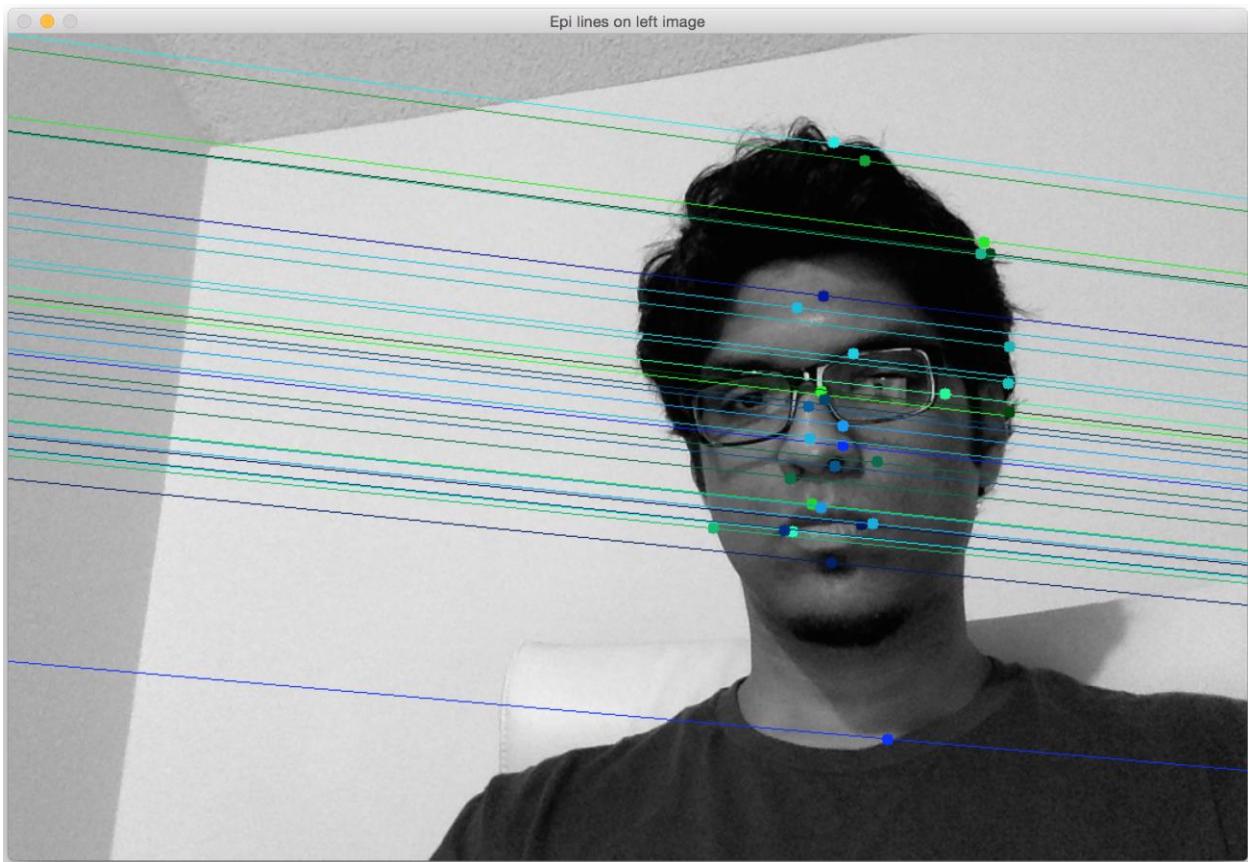


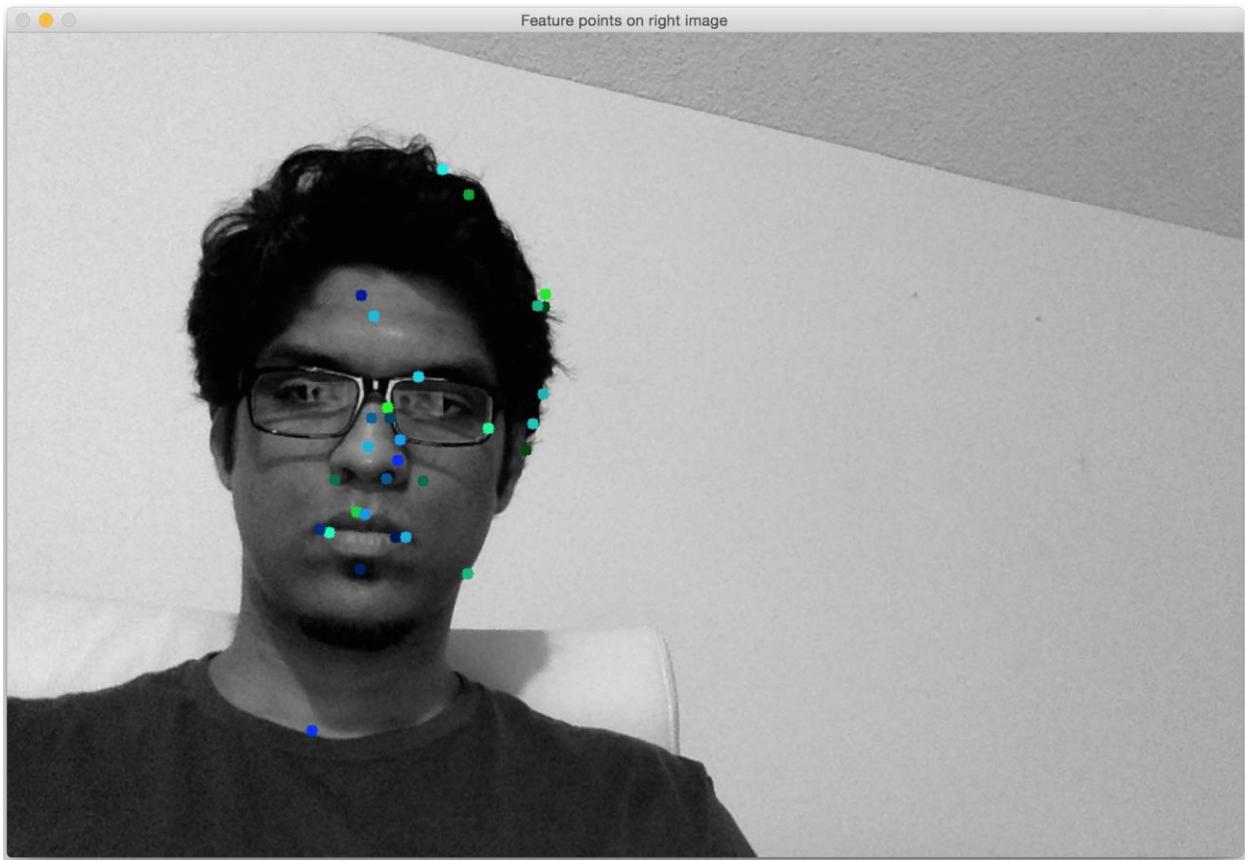


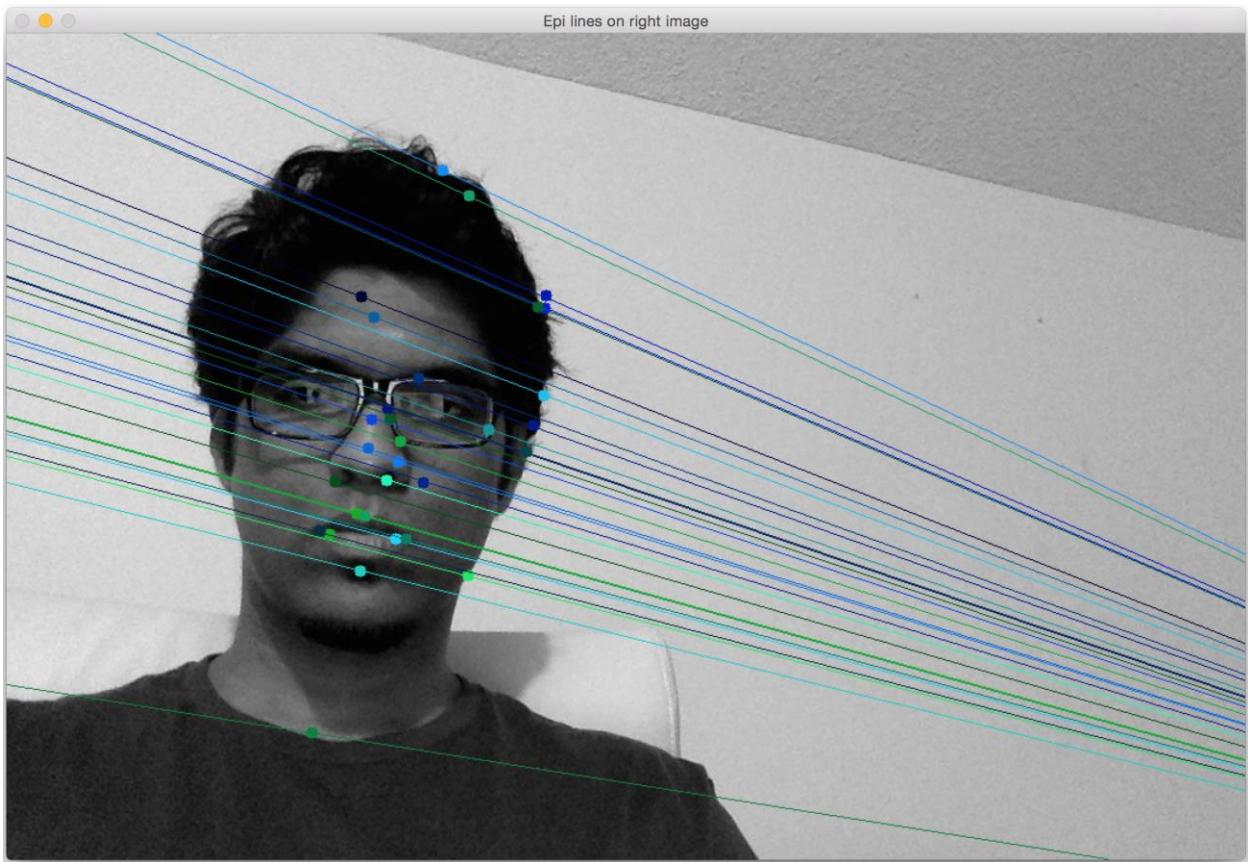


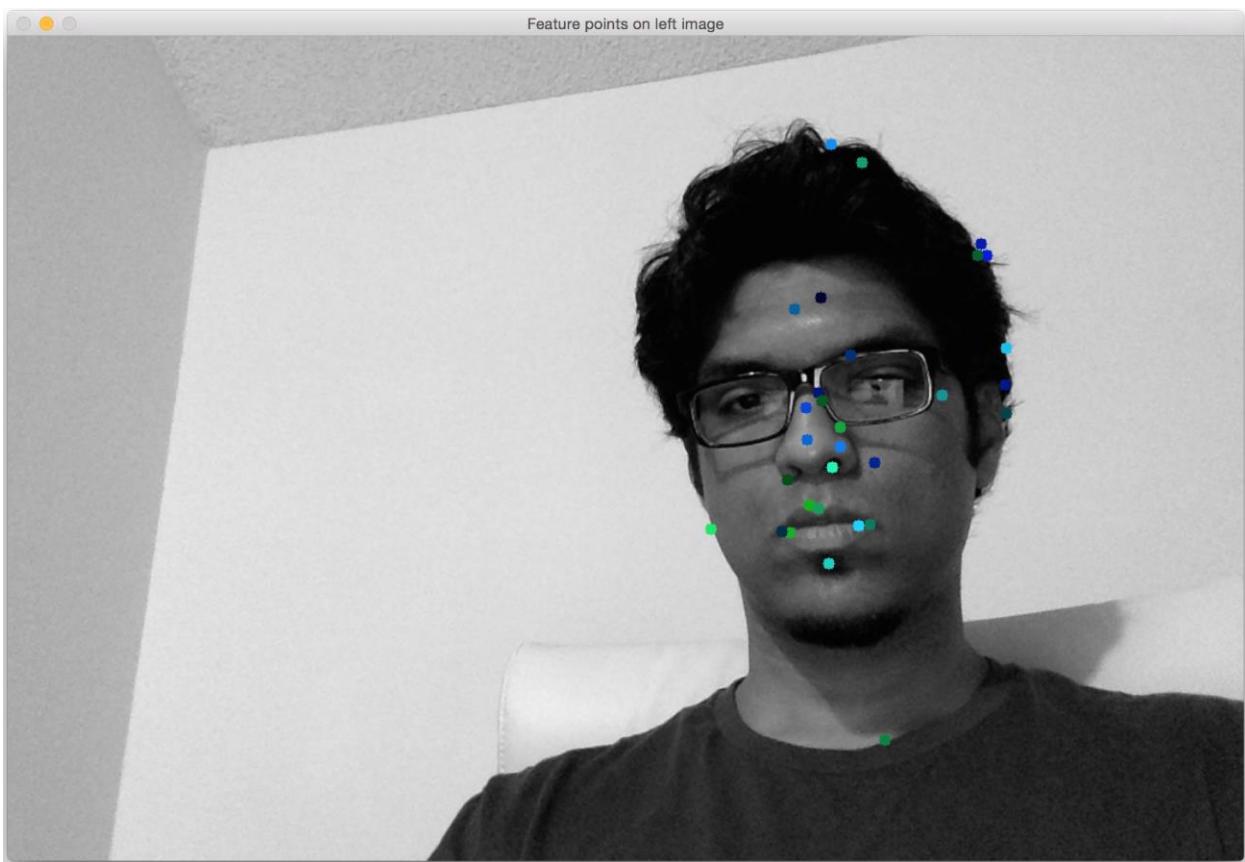


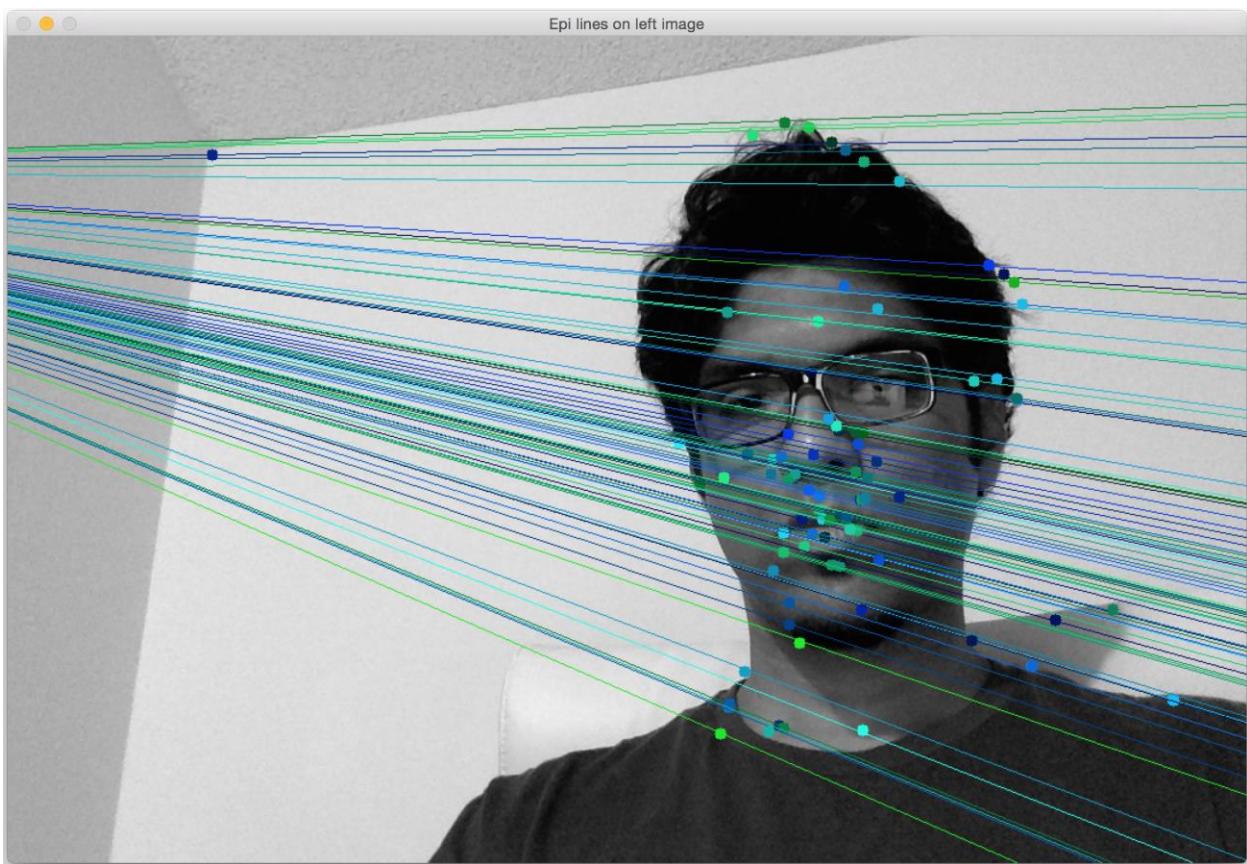


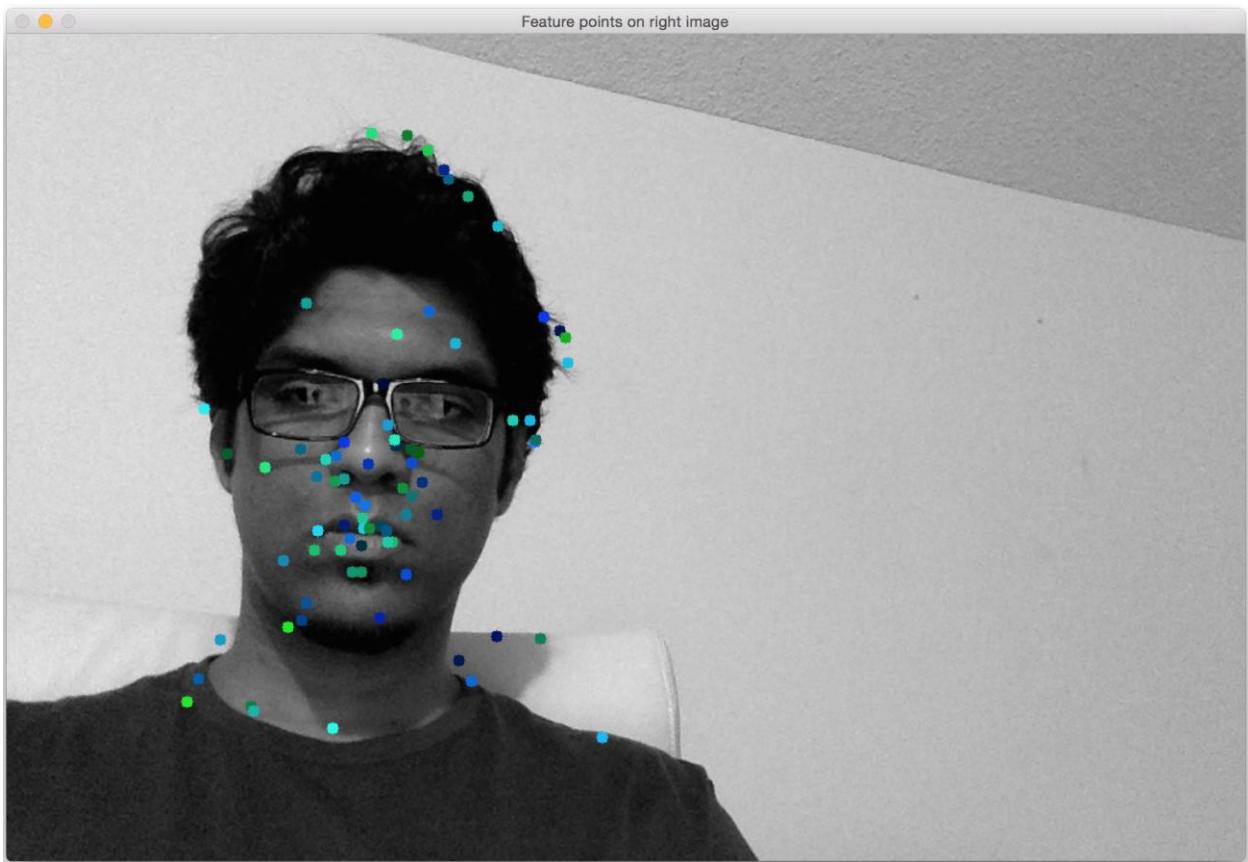


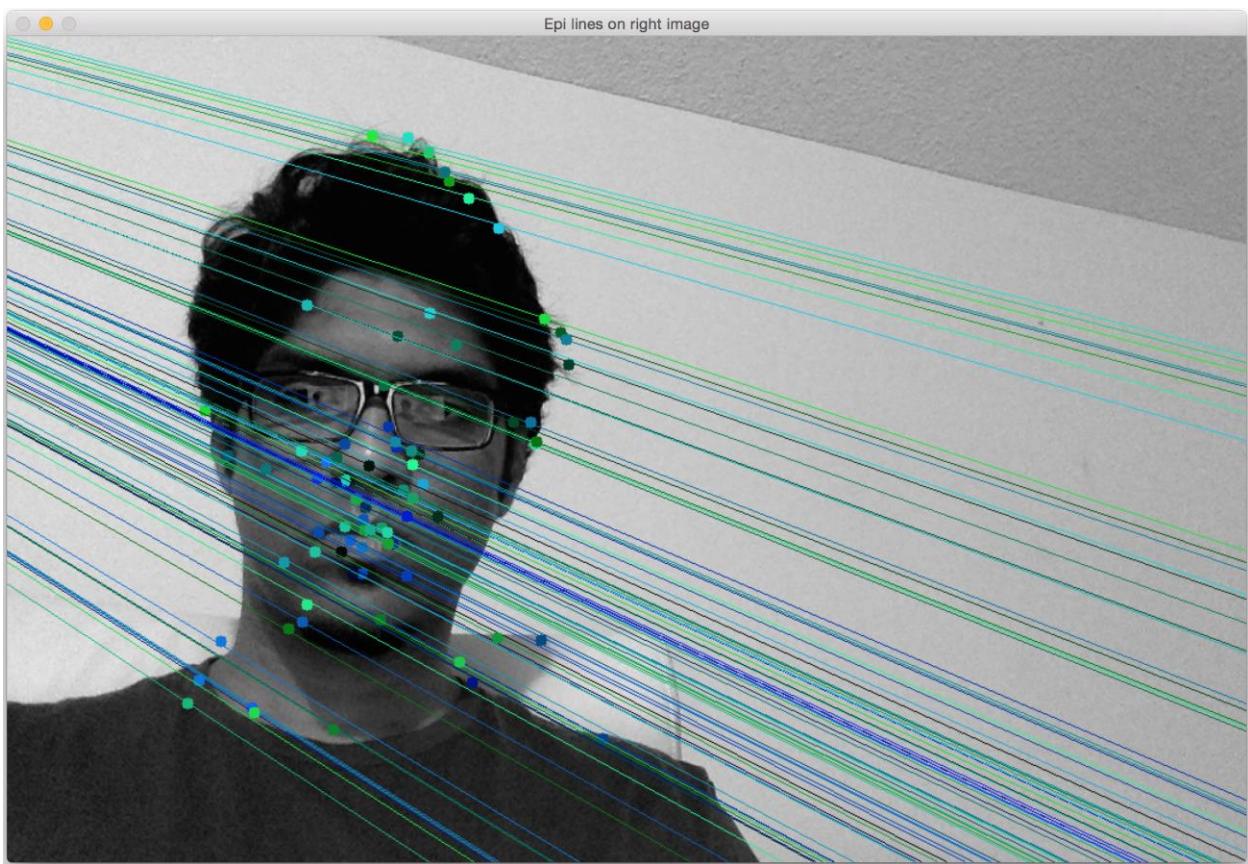


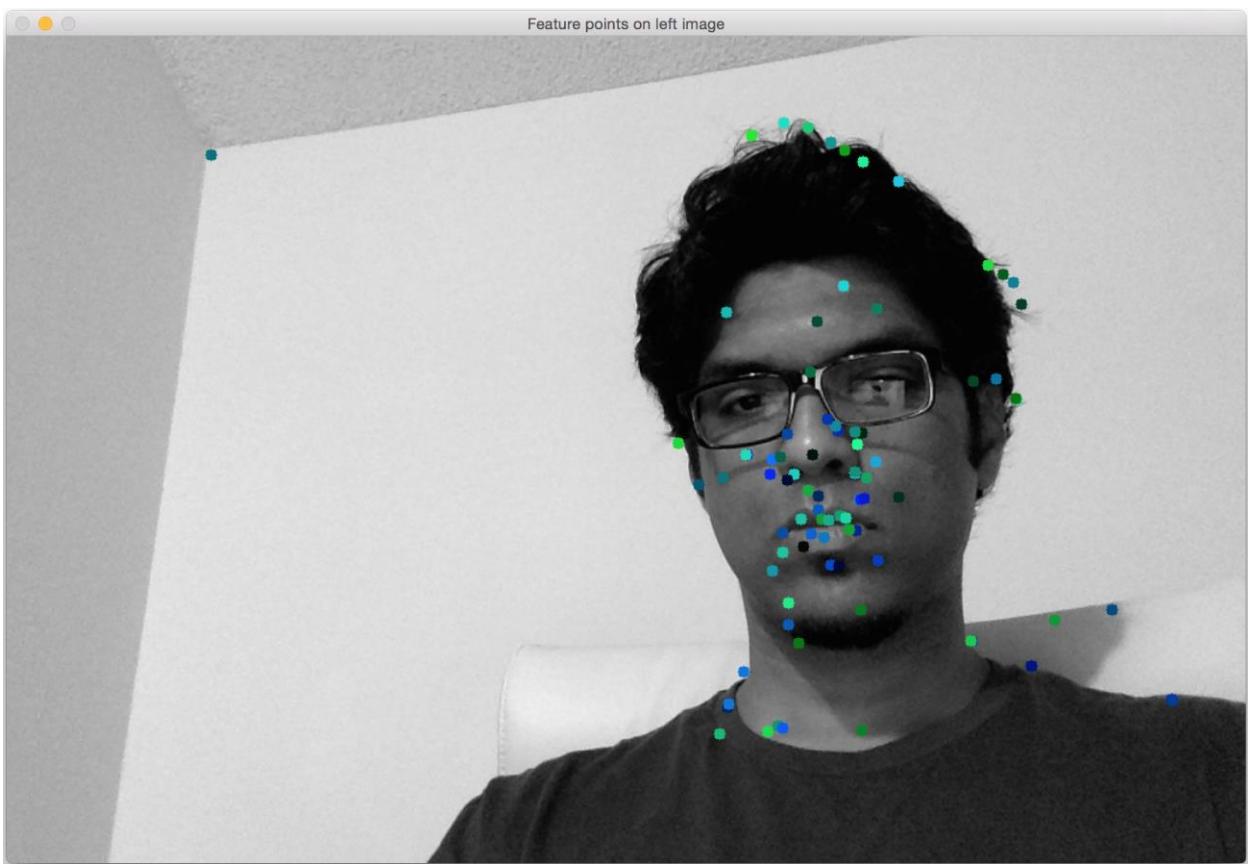


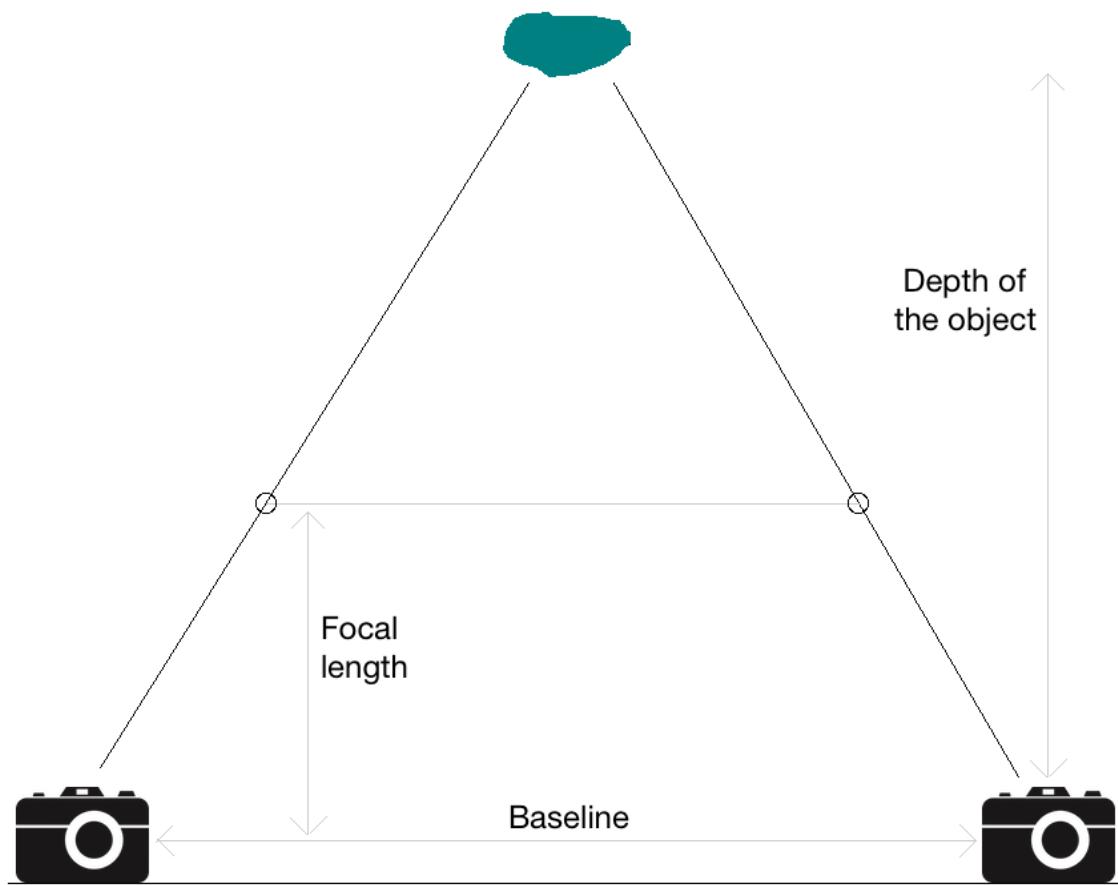


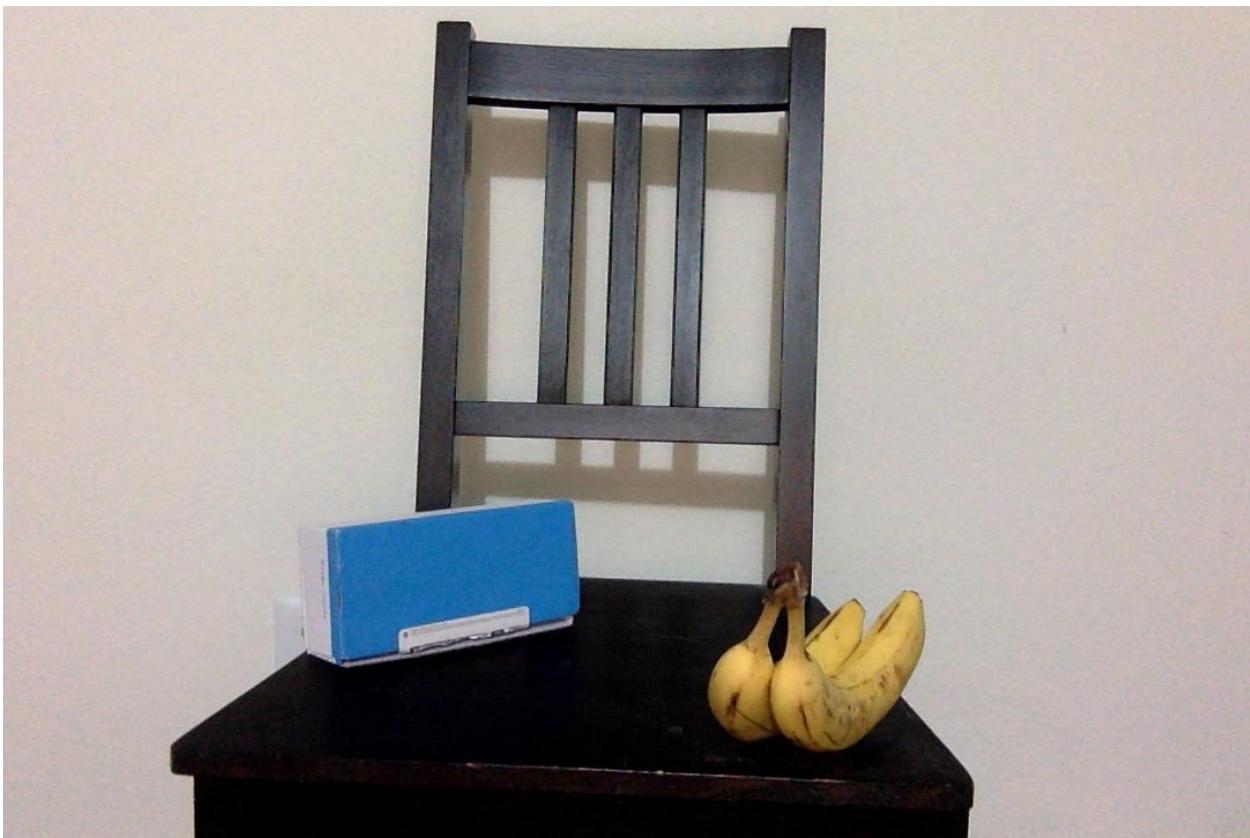


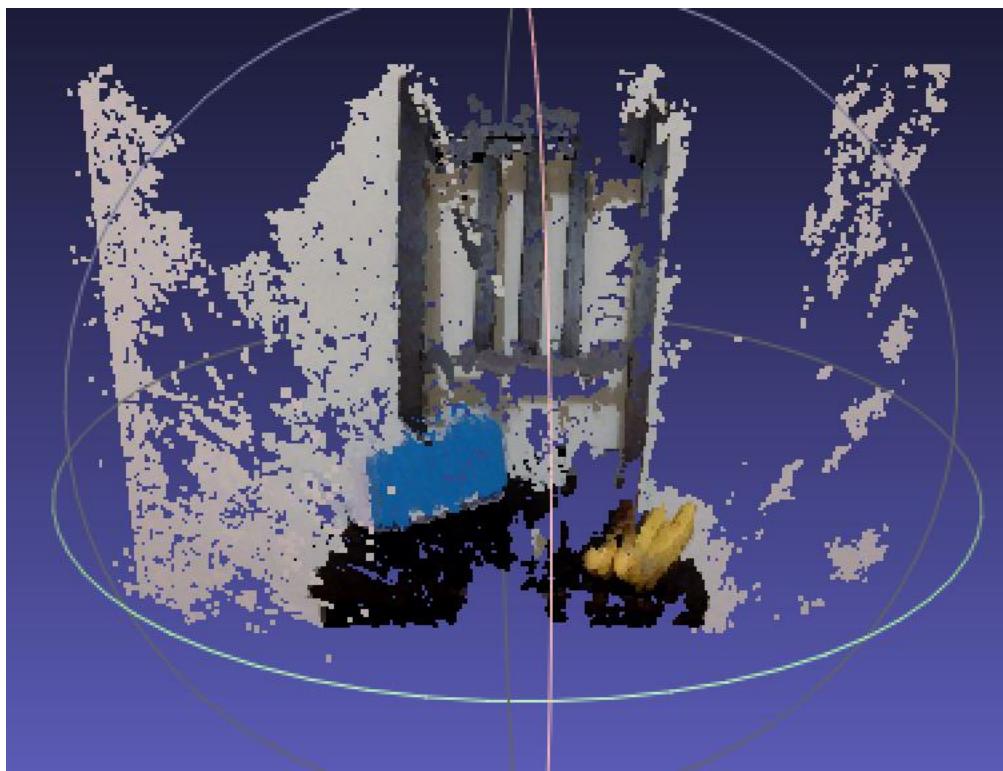


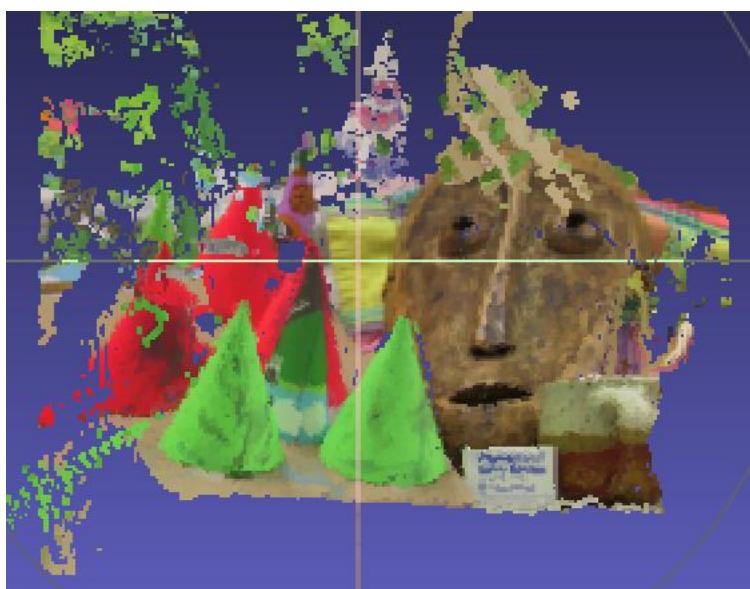


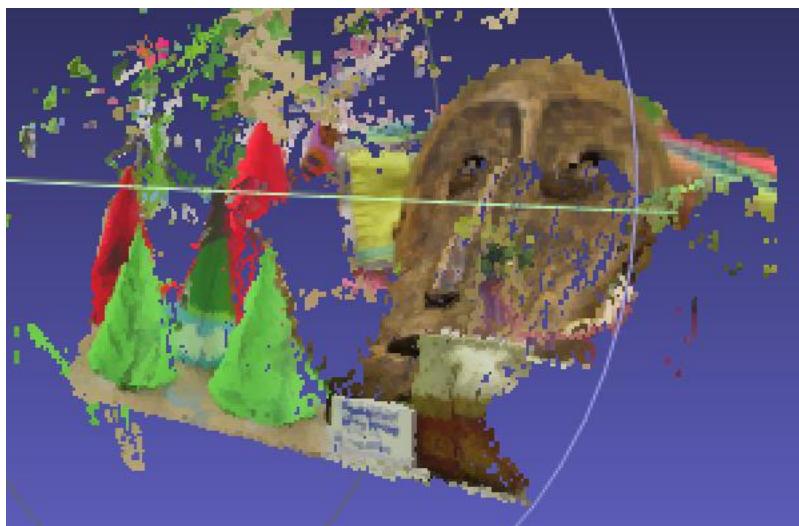












## Chapter 12

