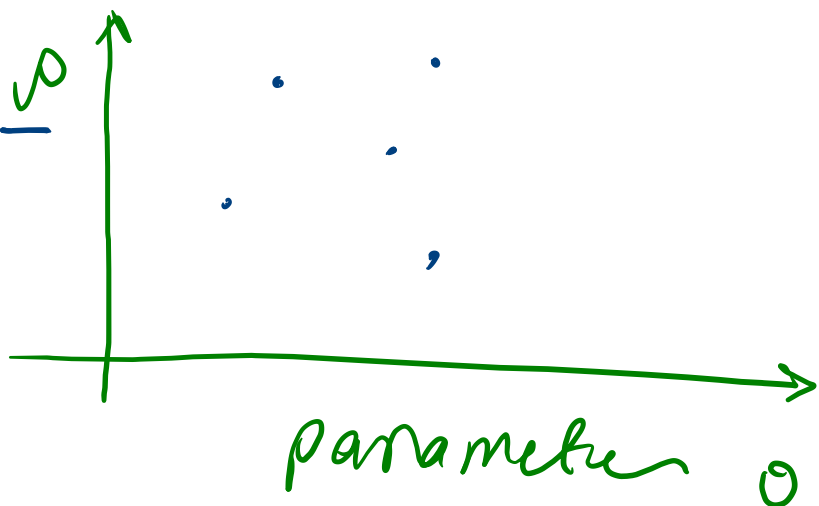
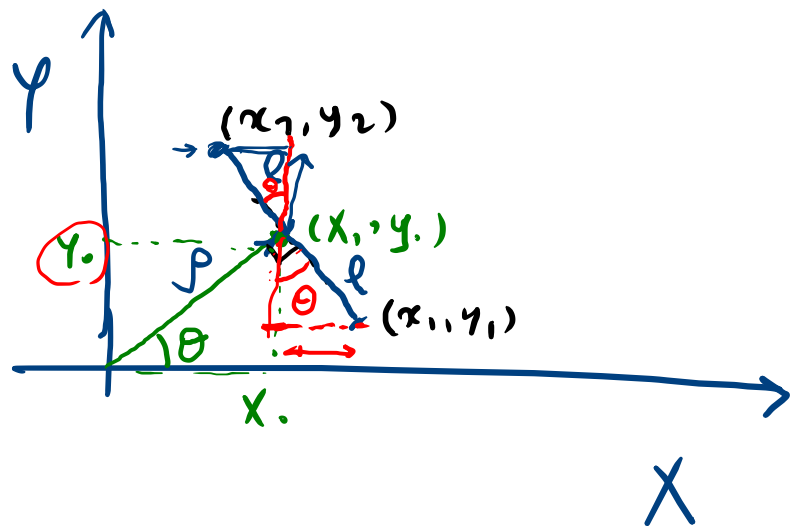
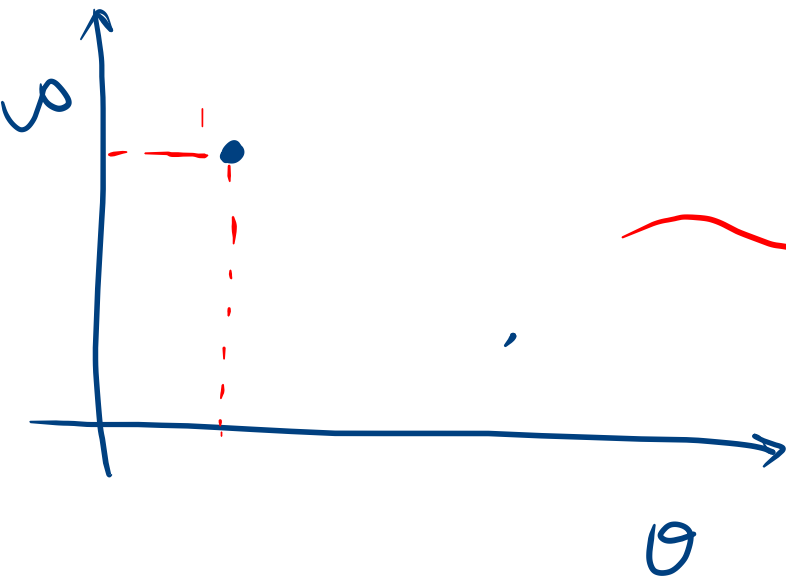


Hough line  $\rightarrow (p, \theta)$



$\nwarrow$   
parameters space!





$$x_1 = x_0 + l \sin \theta$$

$$y_1 = y_0 - l \cos \theta$$

$$x_0 = \rho \cos \theta$$

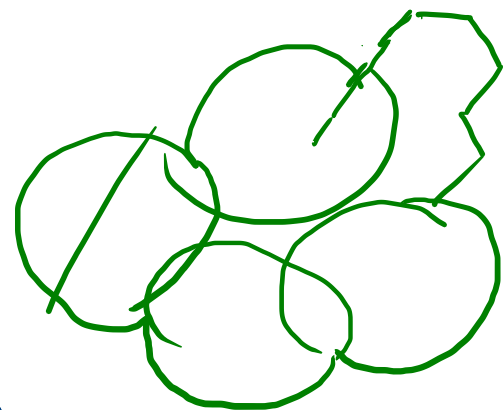
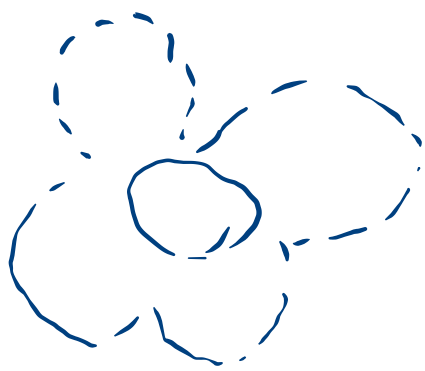
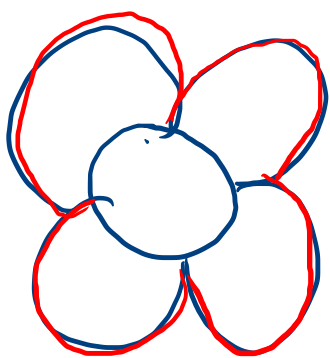
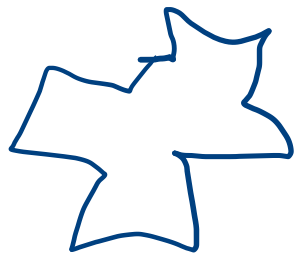
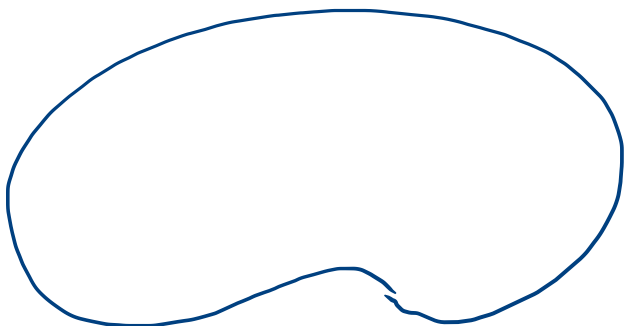
$$y_0 = \rho \sin \theta$$

$$x_2 = x_0 - l \sin \theta$$

$$y_2 = y_0 + l \cos \theta$$

edge linking → Hough Transform —

→ Border detection → Contour!



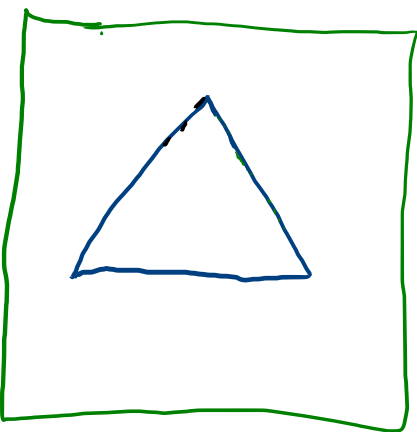
Contour

edge detect

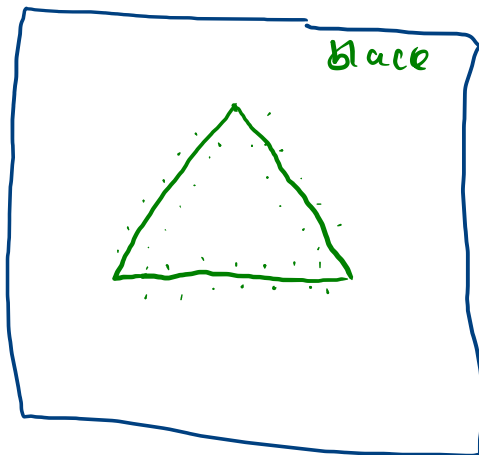
Hough

Contours



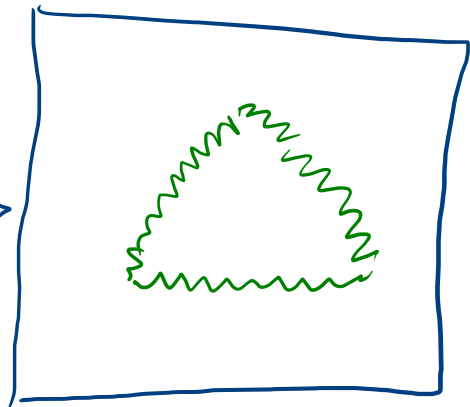


$\| \nabla f \|$



black

$\| \nabla f \|$



$\| \nabla f \|^2$

