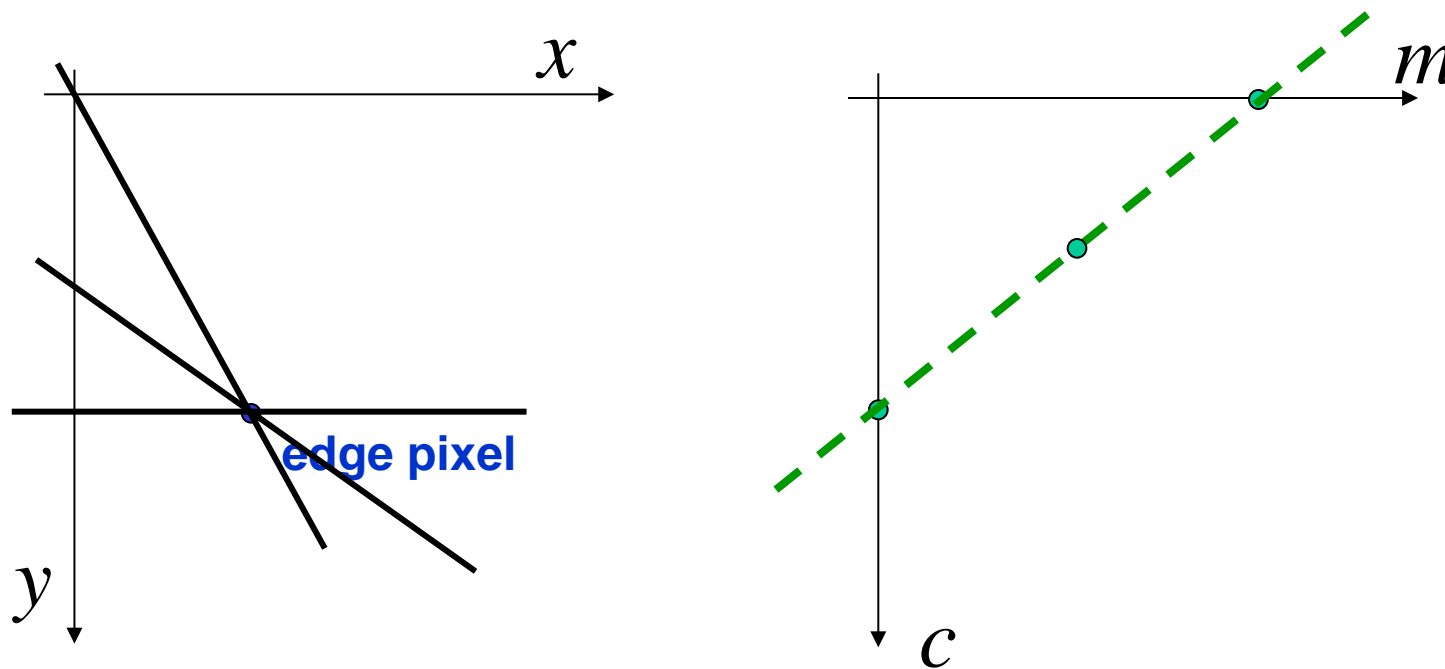


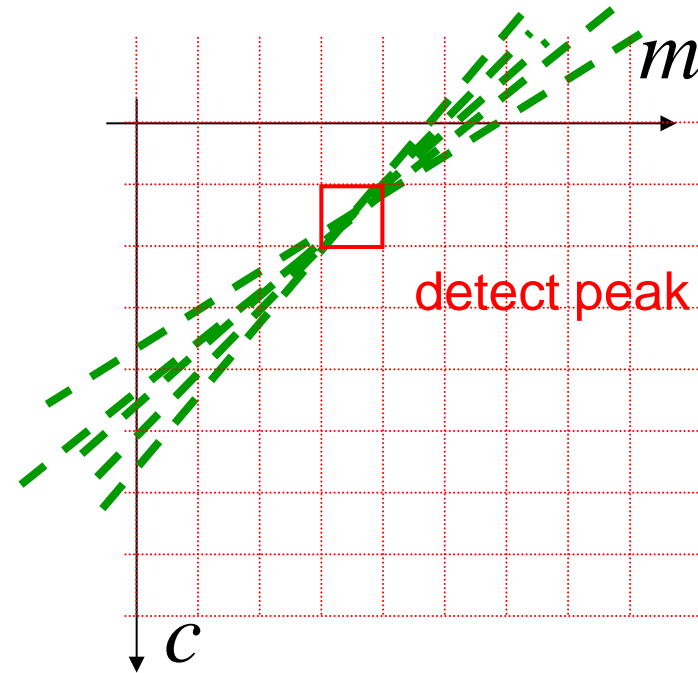
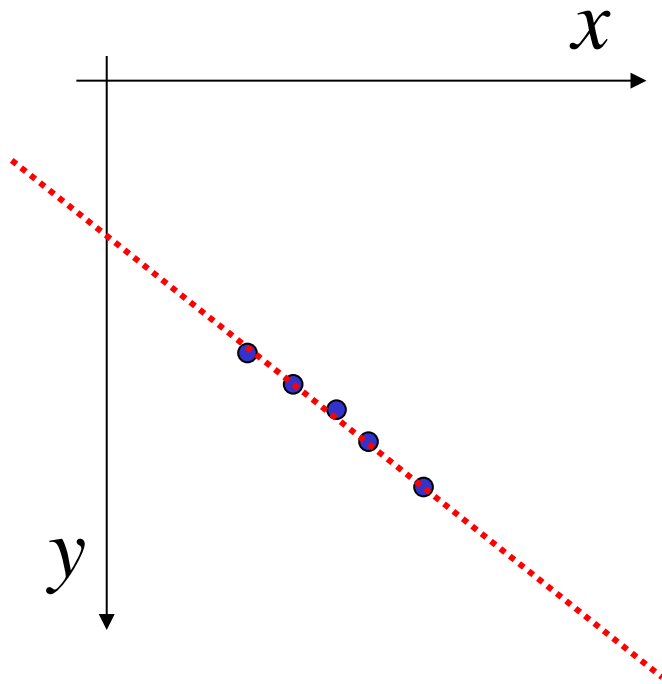
Hough transform

- Problem: fit a straight line (or curve) to a set of edge pixels
- Hough transform (1962): generalized template matching technique
- Consider detection of straight lines $y = mx + c$



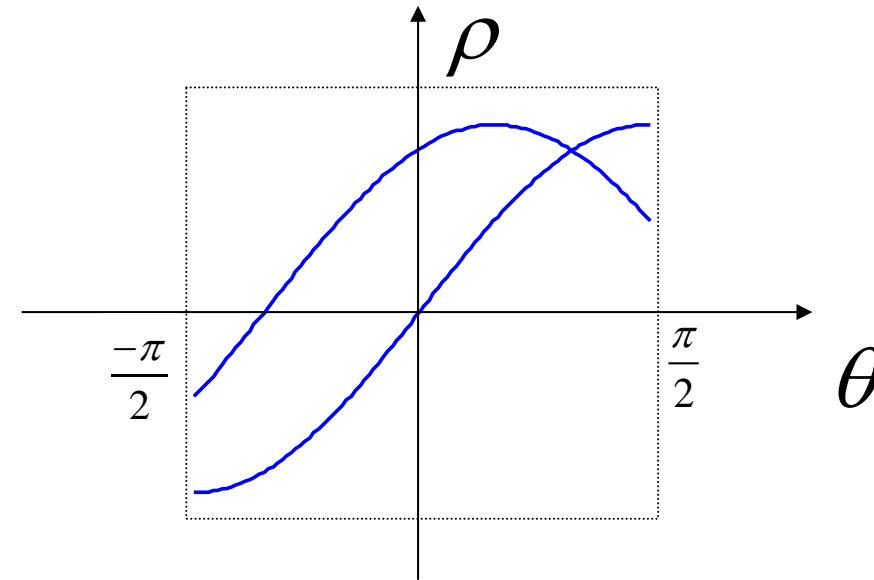
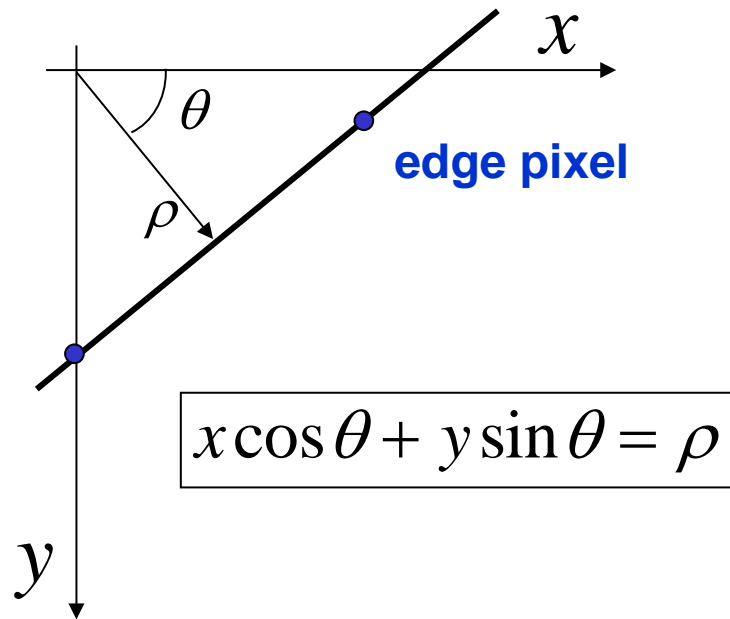
Hough transform (cont.)

- Subdivide (m,c) plane into discrete “bins,” initialize all bin counts by 0
- Draw a line in the parameter space $[m,c]$ for each edge pixel $[x,y]$ and increment bin counts along line.
- Detect peak(s) in $[m,c]$ plane



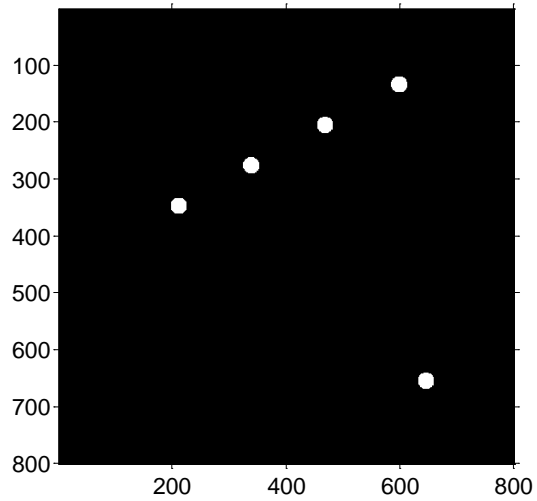
Hough transform (cont.)

- Alternative parameterization avoids infinite-slope problem

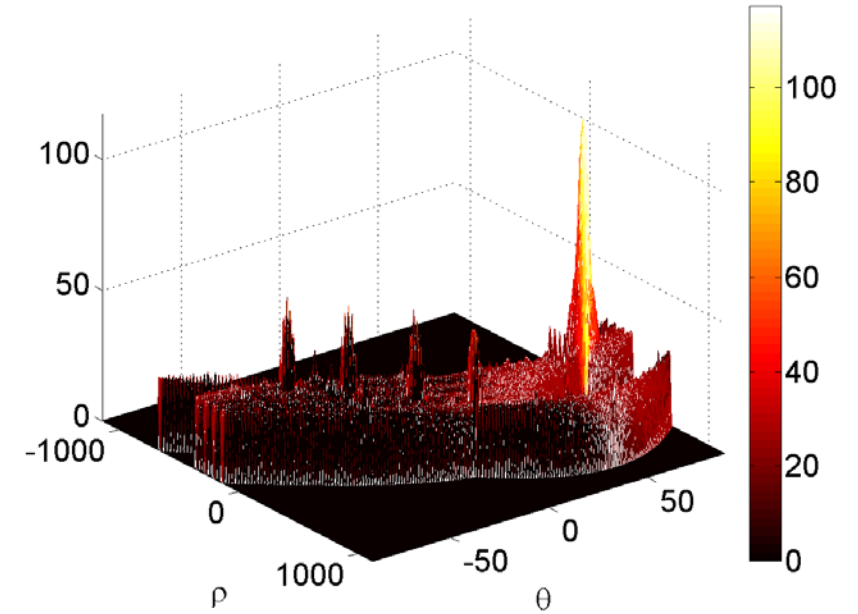
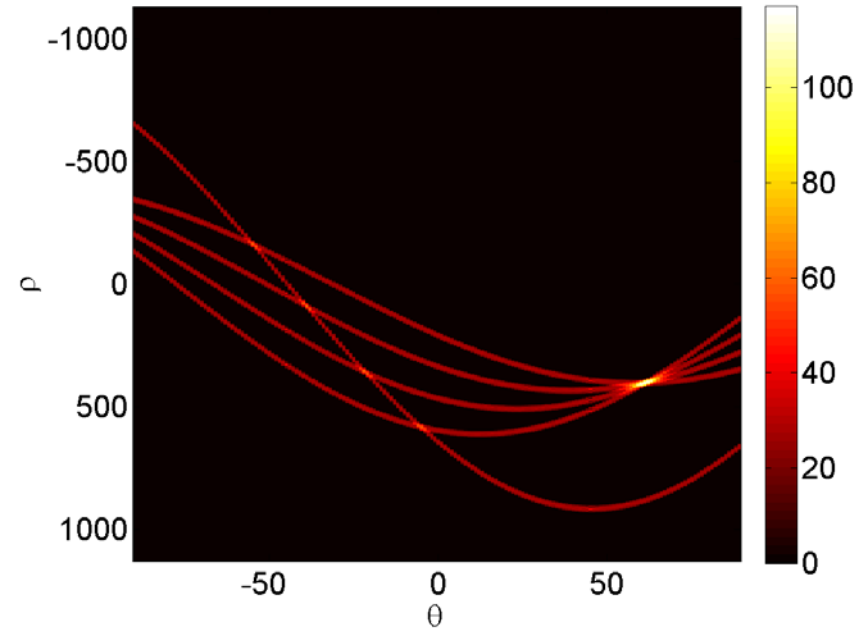


- Similar to Radon transform

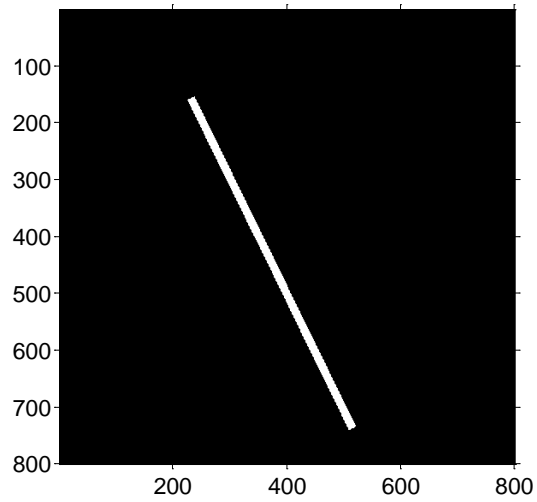
Hough transform example



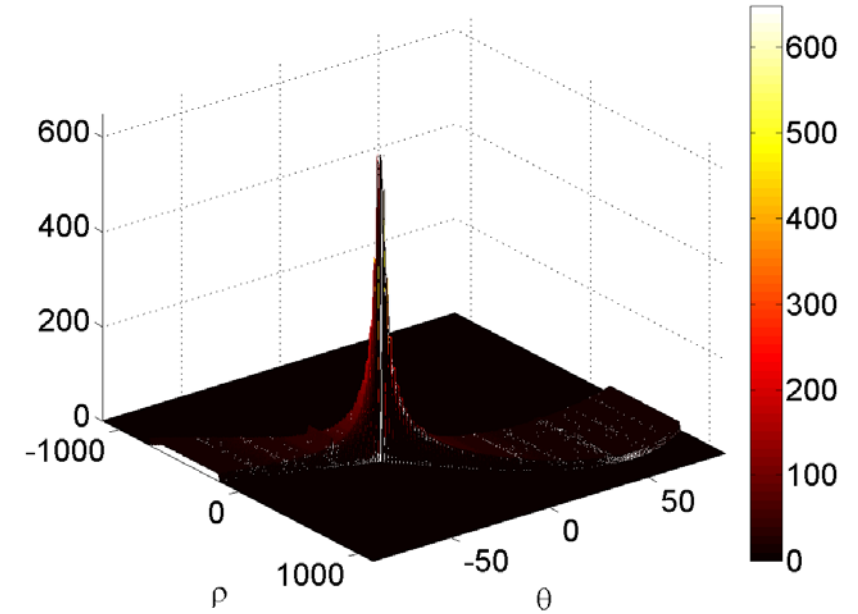
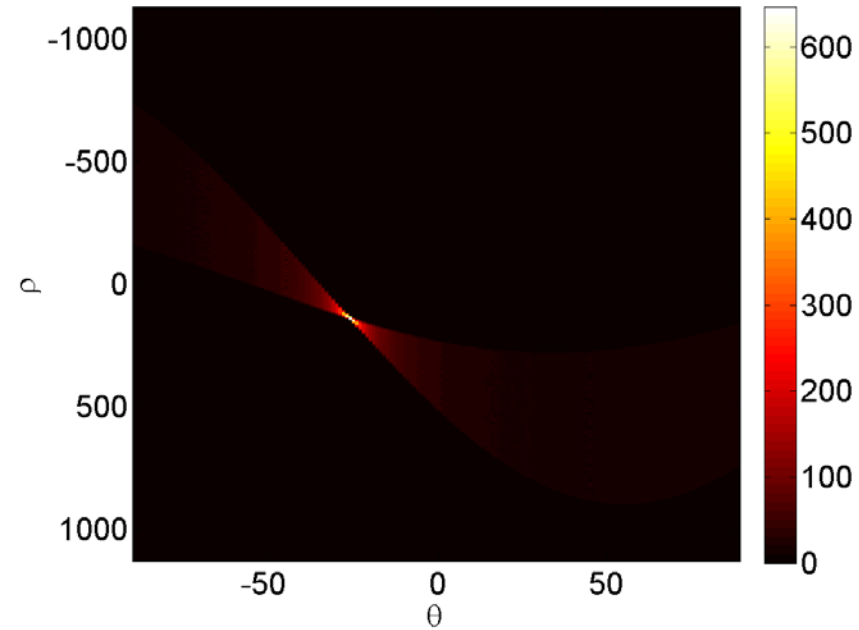
Original image



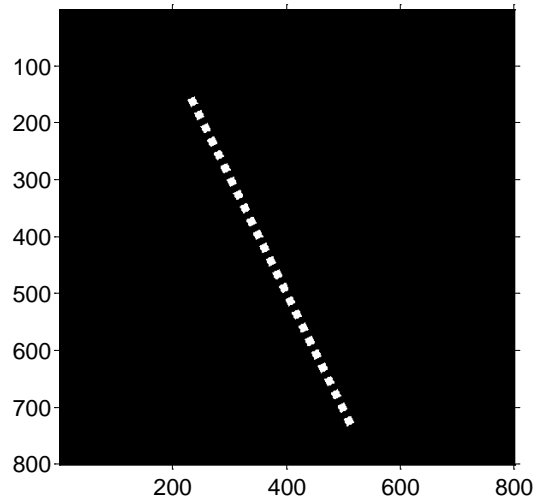
Hough transform example



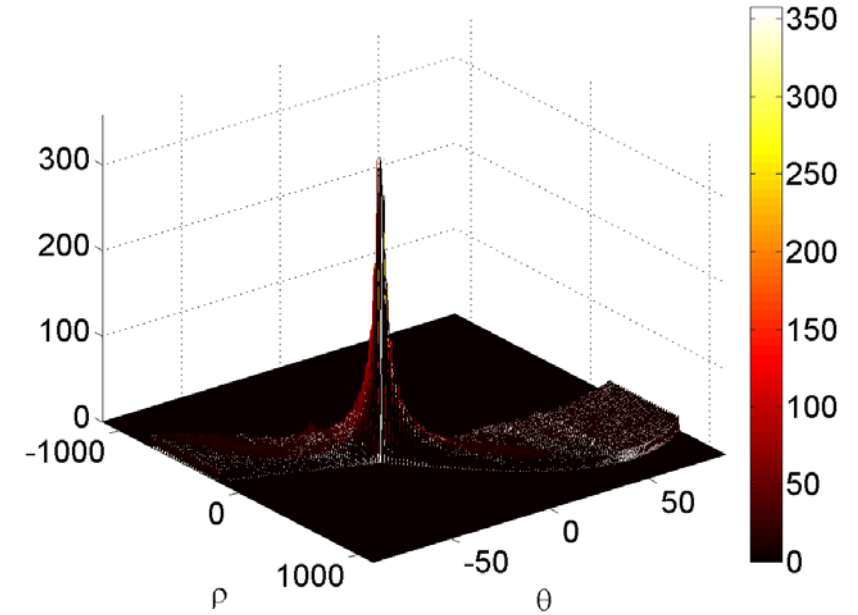
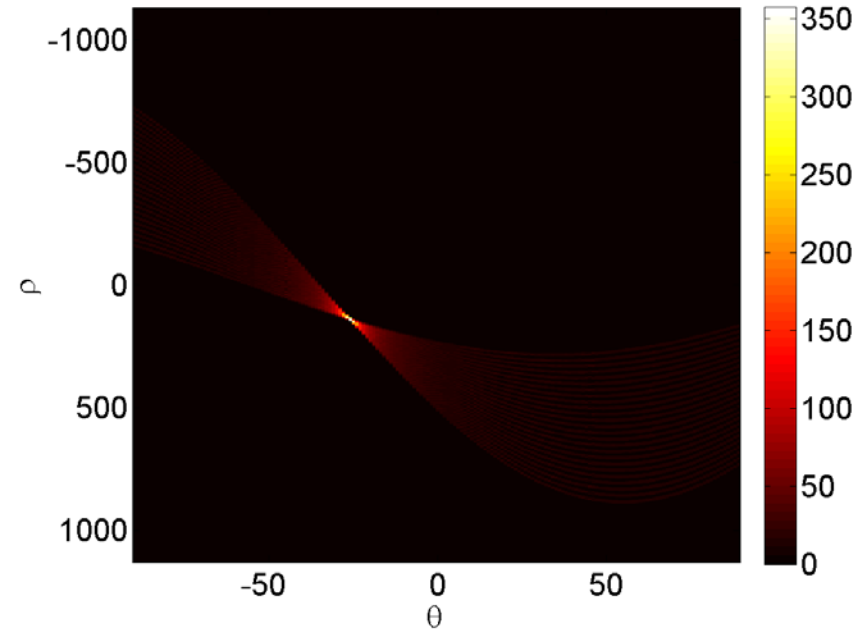
Original image



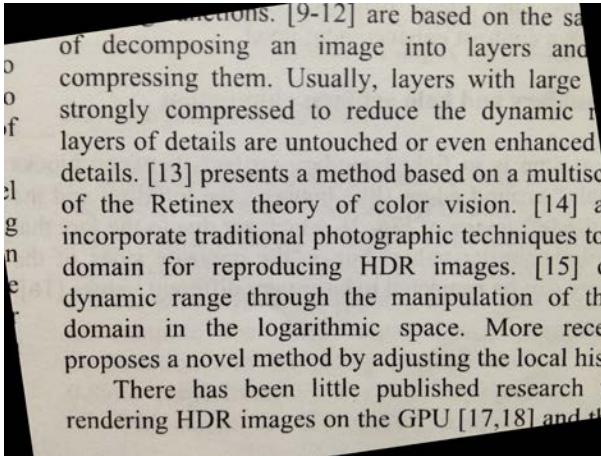
Hough transform example



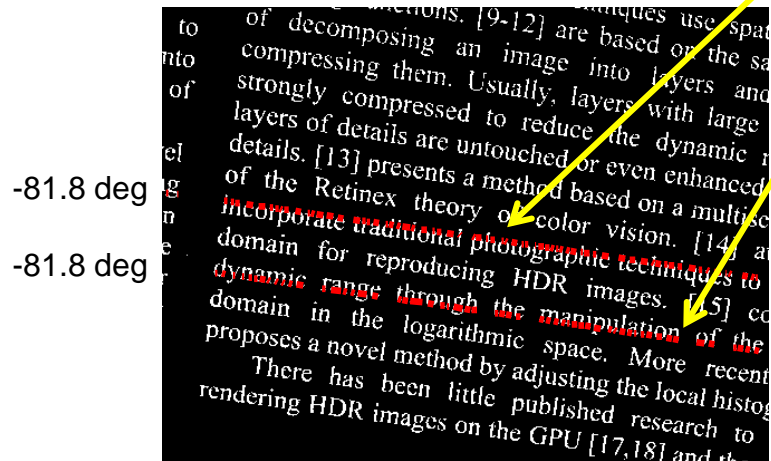
Original image



Hough transform example



De-skewed Paper



Global thresholding

