

Rifat Now
CS Vision

HW #3

Prob 1: $n = e \sin(wx)$ The 1D signal is a sinusoidal curve, and the derivative will compute the peak of each curve. Noise is amplified even higher when computing derivative, thus leading to an even higher difference between I and I_n .

Prob 2: $x \cos \theta + y \sin \theta = r$. In Hough space, the possible lines passing through the point (x, y) is represented by curves (sinusoidal). Each sinusoidal curve is all possible lines passing through (x, y) . Rearranging this gives you $y = \frac{r - x \cos \theta}{\sin \theta}$, which is a sinusoidal curve.

The more possible lines passing through the point (x, y) , the more the frequency of the curve. Thus high intensity reflect detected lines.