

- ex3: to avoid using loops consider using matrix multiplication for ex 3 ex5:
Sum = 1 => blurred, sum = 0 => will have edges (approximation of 2nd derivative?)

$$\nabla^2 f(x, y) = \sum_{-\infty}^{\infty} \sum_{-\infty}^{\infty} c_{nm} * f(x - n, y - m)$$

- if its 0 we are taking edges
- if its 1 we have blurred
- bonus: scipy correlate 2d

Delta Function

- Theme 7
- P. 25 / (or 35)
- P. 14 slides

Special Signals

Continuous Delta Function

$$\delta(t) = \begin{cases} \infty & t = 0 \\ 0 & t \neq 0 \end{cases} \int_{-\infty}^{\infty} \delta(t) dt = 1$$

Superpositions basis of delta-functions

$$x(n) = \sum_{k=-\infty}^{\infty} x(k) \delta(n - k)$$

back to tp

$$x(n) = \delta(n) + \delta(n - 1) + \delta(n - 4) h(n) = \delta(n) + \delta(n - 1)$$

x = [1, 1, 0, 0, 1, ...]

0 4

h = [1, 1, ...]

convolve them

x 1 1 0 0 1

h 1 1

Error in photo?