**Computer Vision Notes**

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References:

* Introduction to Image Understanding course at the University of Toronto

**Linear Filters** (TODO: Tb ch 3.2)

***Digital Image***: a map or a matrix of integer intensity values , is in a grayscale image, in a color image.

Problem: want to locate object in image.

Solution: slide and compare the image of the object.

Problem: noise in image.

Solution: modify pixel by applying function on a neighborhood of pixels e.g., average neighbors (assumes neighbors similar, noise independent) using moving average with (non-)uniform weights.

***Correlation*** (cv2.filter2D, 2D moving average with (non-)uniform weights): Given input , where

where size of the weight **kernel/mask** is and its entries are **filter coefficients**.

where

**Types of Filters**

Sharpening Filter:

Gaussian Filter:

[TODO]

Convolution