Image filtering & object detection

Exercise 1

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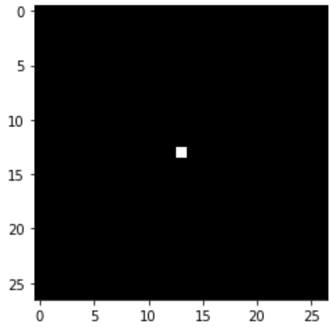
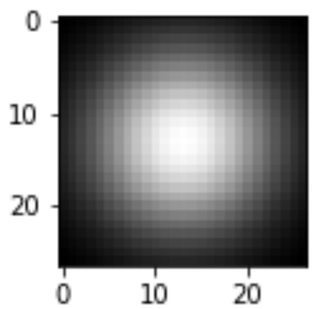
1. d)



An image with only central pixel as non-zero value can be used to find out impulse responses of different combinations of the Gaussian and its derivatives.

After applying the following filter combinations :

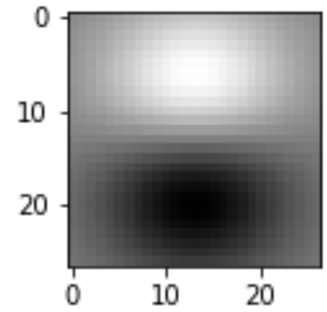
1. First Gx, then Gx^T



g(x,y)

The filter blurs the image using an impulse response as a Gaussian. It represents a 2-Dimensional Gaussian kernel in zero derivative order.

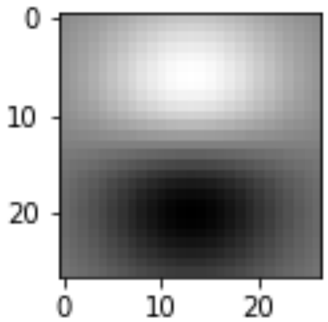
2. First Gx, then Dx^T



d/dx g(x,y)

The filter blurs the image using an impulse response as a Gaussian. It represents a 2-Dimensional Gaussian kernel in dx.

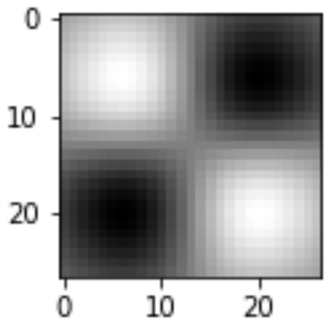
3. First Dx^T , then Gx



d/dx g(x,y)

The filter blurs the image using an impulse response as a Gaussian. It represents a 2-Dimensional Gaussian kernel in dx.

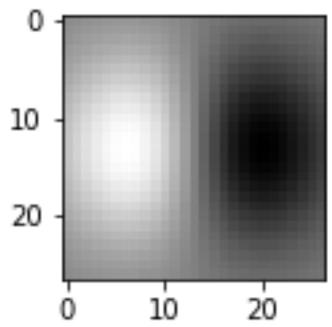
4. First Dx, then Dx^T



d/dx dy g(x,y)

The filter blurs the image using an impulse response as a Gaussian. It represents a 2-Dimensional Gaussian kernel in dx dy.

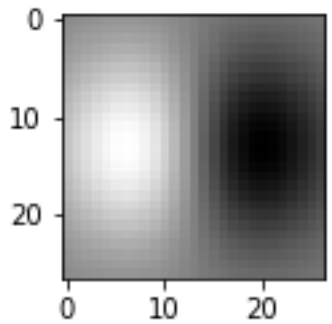
5. First Dx, then Gx^T



d/dy g(x,y)

The filter blurs the image using an impulse response as a Gaussian. It represents a 2-Dimensional Gaussian kernel in dy.

6. First Gx^T , then Dx



d/dy g(x,y)

The filter blurs the image using an impulse response as a Gaussian. It represents a 2-Dimensional Gaussian kernel in dy.