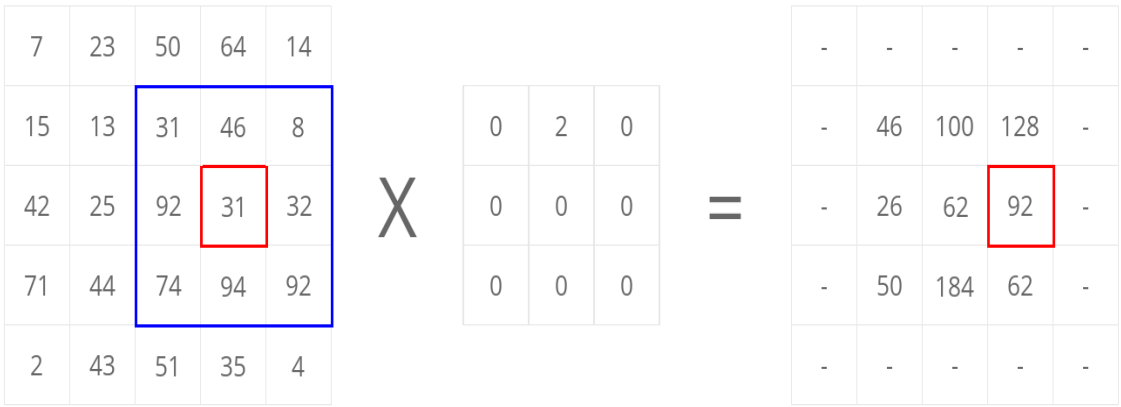
Image Convolution

We implemented gussian blur technique to blur the images. Since convolution deals with convolving a kernel matrix with all the pixels in the image. Gaussian blur (also known as Gaussian smoothing) is the result of blurring an image by a Gaussian function. The values in the kernel follows a normal distribution, thus giving the near pixels more weight than the far away neighboring pixels. We divided the pixels equally between the processors and parallelize the algorithm. The two pass algorithm has a time complexity of O(2*n*m*k) where k is the kernel size.



Results:

When convolved with a 9 by 9 kernel, we get.

RGB Images (width * height * 3)	Serial	OpenMp 2 Threads	OpenMp 4 Threads
1280 * 1920	10	1.44 sec	1.35 sec
333*500	0.179 sec	0.12 sec	0.12 sec
3519 * 5279	21 sec	12.5 sec	10 sec

These are the results when images are convoled with 9 * 9 Kernel