CONVOLUTION LAYER:

* Description:- This layer employs 32 filters with a size of 3x3, convolving over the input image. The ReLU activation function introduces non-linearity, enabling the model to learn complex features. This layer extracts low-level features such as edges, corners, and basic shapes from the input image.

Mathematically,

* No. of Filters/Kernels (K)=32
* Kernel Size (D) =3\*3

For an image G with dimension H\*W\*C, where,

* H=> Height =48px
* W=> Width =48px
* C=> Channels=1(Grayscale image)

The Convolution Operator on an Input patch for the filter is defined as:

Where,

**:**Pre activation value at position (i,j)

: The kernel weight of the kernel at position (m,n).

Input values from the image pixels at position (i+m,j+n).

The bias value associated with the Filter/Kernel.