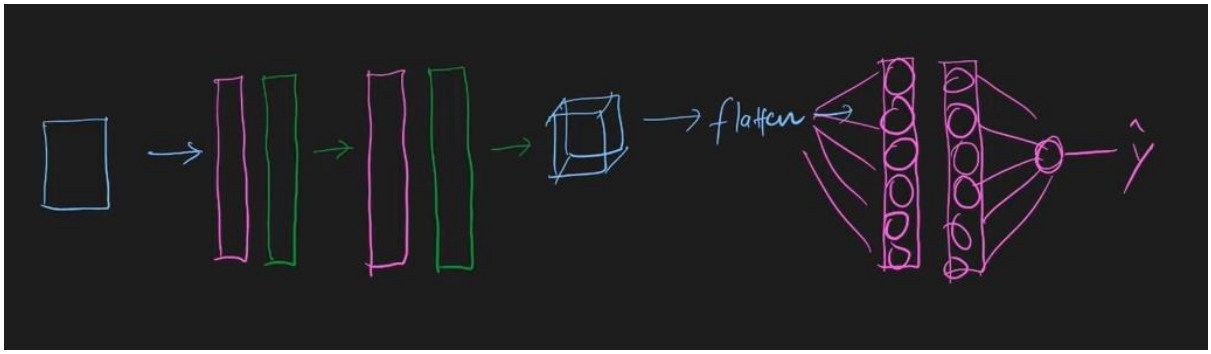
CNN Architecture

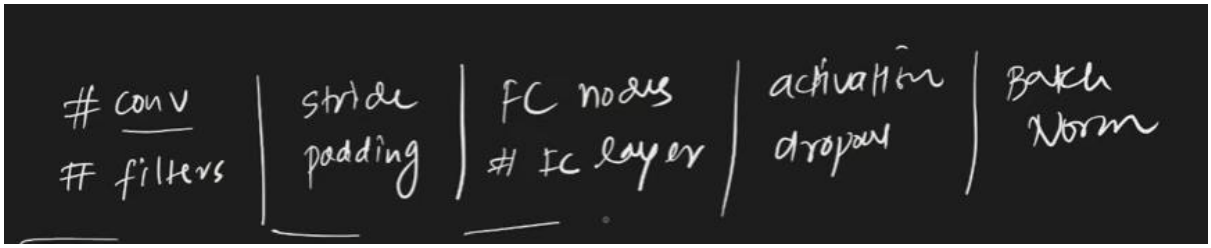
1.) Convolution
2.) Padding/Stide
3.) Pooling

Using this 3 concept we can create CNN Architecture

Image-> Convolution-> Pooling -> Tensor Flatten -> pass it to fully connected layer -> output layer



Yeahi basic Architecture pe different scenarios tryout karke alag alag architecture banate hai



Working of CNN in more detail:

1.) Input Layer :
   Imagine you have picture you want the computer to understand.
   Each Picture is made up of tiny dots called pixels.
   The input layer of CNN takes these pixels as input.
2.) Convolutional Layers:
   These Layers are like smart filters that scan the picture to find important patterns,
   like edges , textures or shapes.
   They move across the picture, looking for these patterns, and
   create new "feature maps" that highlight where these patterns are.
3.) Activation Function:
   After each convolutional layer, their isan activation function.
   This function adds little extra brainpower to the network, helping it understand more complex patterns in the data.
4.) Pooling Layers:
   Pooling Layers helps simplify the information by shrinking down feature maps.
   They look at small sections of the feature maps and just keep the most important information, like The main shapes or colors.
   This makes things easier for the network to understand.
5.) Fully Connected Layers:
   These Layers act like a big brain that takes all the simplified information from previous layers and tries to make sense of it.
   They look at all patterns and decide what they mean like whether there is a cat or dog in picture
6.) Output Layer:
   Finally the ouput layer gives you the answer. It tells you what network thinks is in the picture based on all patterns it found.

So, a CNN is like a smart detective that looks at a picture, finds important clues, simplifies them, and then decides what the picture is about. It's really good at understanding pictures and can be used for all sorts of cool things, like recognizing objects, faces, or even emotions.

LeNET

Yann Lenun