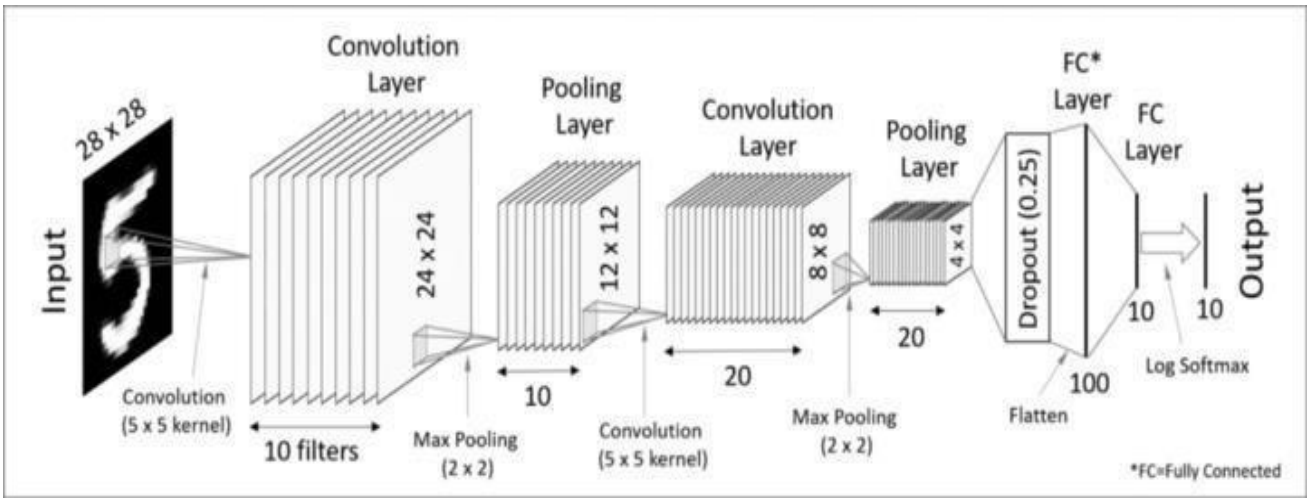
Project Design Phase-I

Date	2 October 2022
Team ID	PNT2022TMID01617
Project Name	A Novel Method For Handwritten Digit Recognition system
Maximum Marks	4 Marks

Solution Architecture:

- Break the image into small image tiles — Similar to sliding window, we can pass sliding window over the entire large image and each result is saved as separate, as a segment of large image as tiny picture tile.
- Feeding each tiny tile into the smaller size neural network — we rarely initialize the parameters with the same values and if not so, then we mark that tile as interesting.
- Save the results from each small tile into a new array — we would not like to misplace the index of the original file.
- we place the results in a grid of the same arrangement as an original image.

Solution Architecture Diagram:



- Input: Raw pixel values are provided as input.
- Convolution Layer: Input layers translates the results of neuron layer. There is need to specify the filter to be used. Each filter can only be a 5*5 window that slider over input data and get pixels with maximum intensities.
- Rectified linear unit [ReLU] layer: provided activation function on the data taken as an image. In the case of back propagation, ReLU function is used which prevents the values of pixels form changing.
- Pooling layer: Performs a down-sampling operation in volume along the dimensions (width, height).
- Fully connected layer: Score class is focused, and a maximum score of the input digits is found.