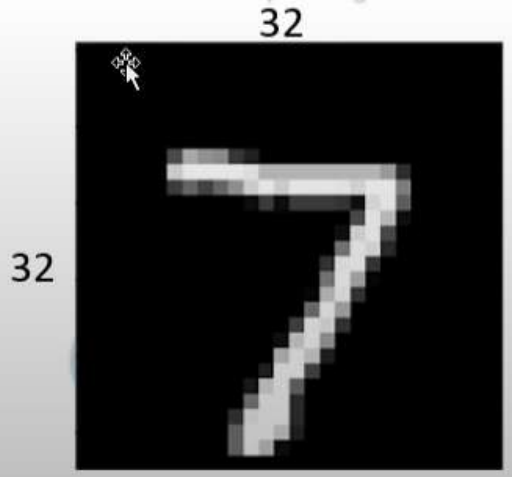
LeNet

(Very 1st Convolutional Neural Network)

LeNet Trained On:

LeNet was trained on greyscale images and shape of images are 32*32*1

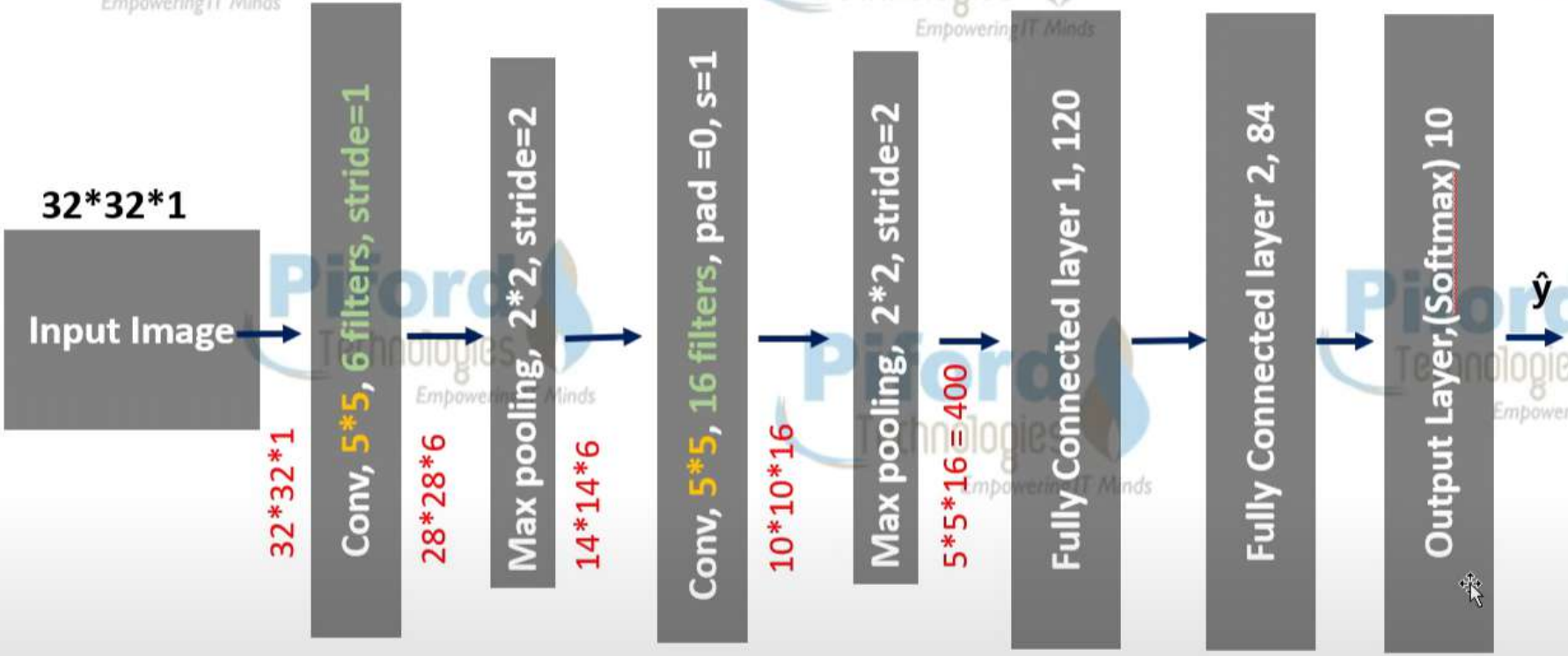


Goal Of LeNet :

To recognize digits written in Bank Cheques

LeNet layer structure

LeNet - 5


32*32*1
Input Image
32*32*1
Conv, 5*5, 6 filters, stride=1
28*28*6
Max pooling, 2*2, stride=2
14*14*6
Conv, 5*5, 16 filters, pad =0, s=1
10*10*16
Max pooling, 2*2, stride=2
5*5*16 =400
Fully Connected layer 1, 120
Fully Connected layer 2, 84
Output Layer,(Softmax) 10
ŷ

1st layer:

Input : 32*32*1, 6 filters of size (5×5) ,stride=1

$$\frac{n+2p-f}{s}+1 \quad * \quad \frac{n+2p-f}{s}+1$$

$$\frac{32-5}{1}+1 \quad * \quad \frac{32-5}{1}+1$$

28*28*6

Output of 1st layer is 28x28x6

In this architecture, the image shrinks from 32x32x1 to 5x5x16