

Modern Architecture (S 4)

Major Points from ResNet

→ BN
→ Dropout
→ Softmax
→ Code

→ Quiz.

→ Diff. b/w AlexNet.

Vgg Net
ResNet.

→ GAP / FC.

→ weights.

① ResNet is latest among all & having 4 major blocks in it.

② The total no. of kernels increases from

64 > 128 > 256 > 512.

as we proceed from

first block to last (unlike archi. where each block we expand at 512).

Both architectures are correct but 64...512 will lead lesser computation & parameters.

③ Only the most advanced networks have ditched the FC layer for the GAP layer.

In T-SAI we will only use GAP layers.

④ Nearly every network starts from 56x56 resolution

Softmax

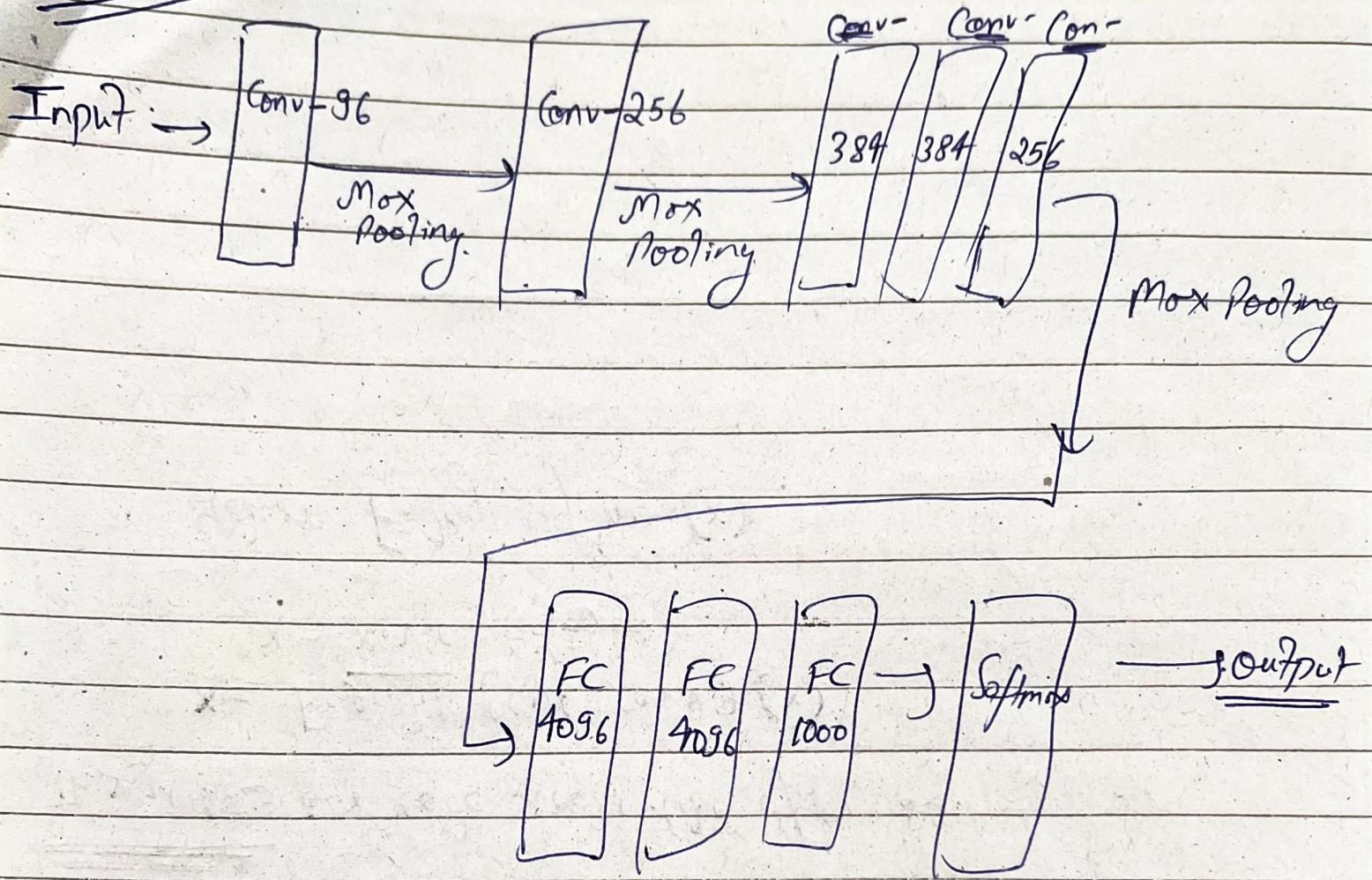
This is how our code looks like after S2.

$$x = F.\text{relu}(\text{self.conv7}(x))$$

$$x = x.\text{view}(-1, 10)$$

return $F.\text{log-softmax}(x)$

AlexNet



Fn AlexNet (first famous CNN)

These typically included ~~the~~ repeating a few convolutional layers followed by max poolings; then a few dense layers.

① But there was ~~was~~ no standard about filter

(2) size to be used. ~~how many~~

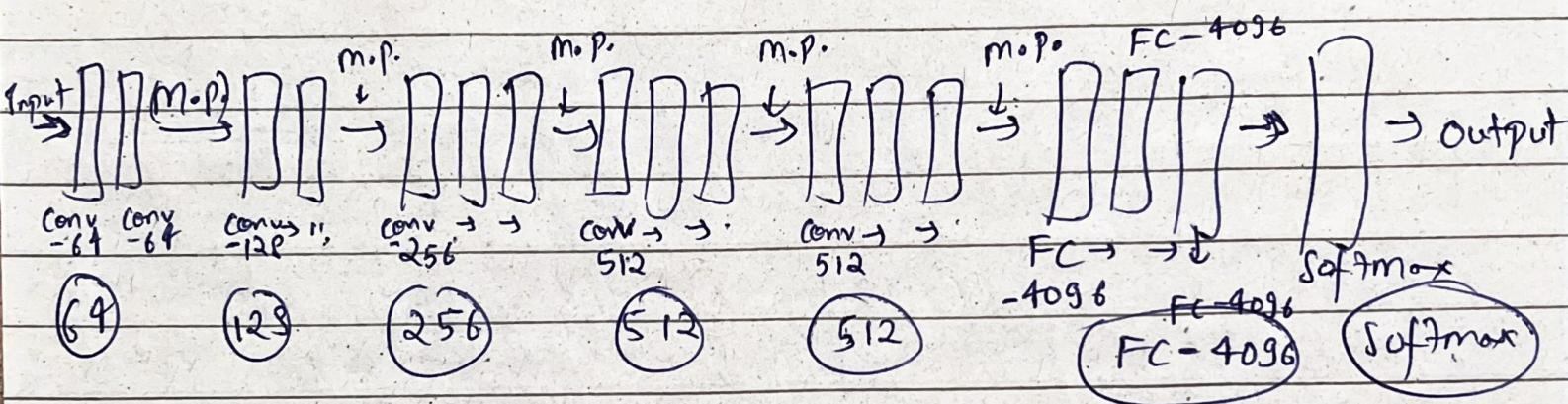
② how many convolutions before max pooling etc.

② size to be used, ~~has many~~

③ how many convolutions before max pooling etc.

VGGNet

4096 ??



Key Points VGG

With introduction of VGG they brought some standards:

- ① it was suggested that all filters to have size of 3×3 ,
 - ② max poolings should be placed after each 2nd convolutions
 - ③ & the number of filters should be doubled after each max poolings.
- ④ And the original proposed VGG network was much deeper than Alexnet.