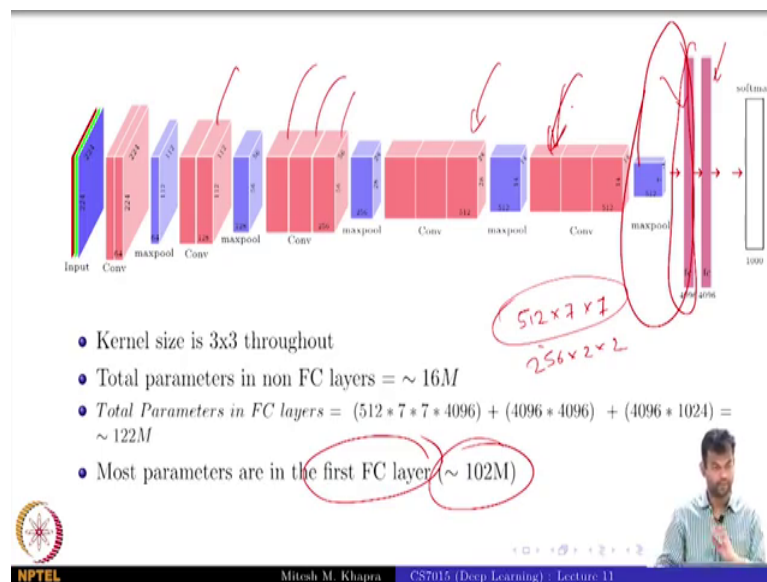


Deep Learning
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Lecture - 91
CNNs (success stories on ImageNet) (Contd.)

This is where we left off in the last class so we look at three networks for image classification starting; with Alex net, then ZF Net, and then VGG Net. VGG net in particular had 16 layers including convolutions and fully connected layers. And one thing that we saw that a large number of parameters are there in the first fully connected layer.

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Because you are connecting a 512 cross 7 plus 7 volume to a 4096 dimensional vector right so, that is one thing. The other thing that I would like to kind of mention right now so, that it becomes useful for the later part of the lecture is that. If I look at any of these pink boxes here right or even these things which are known as the fully connected layers. A if I just flatten them out and view them as a vector, what does that vector actually capture. It captures an abstract representation of the image right.

So, now imagine what would happen is, suppose you have trained one of these networks; Alex Net, VGG Net or any of your favorite networks. And by what I mean by training is that you have been tracking the cross entropy laws and you have run it for several epochs

with some patience and so on. And I was satisfied with whatever training error you are getting and you have stopped training now right.

Now, after this if I pass images through these net through this network and I take the representation from any of these boxes or from the fully connected layer; what is it that I have essentially got now? I have got an abstract representation of the image that I have been feeding it right. So, just remember this and this is something that we will use.

So, this is very common to do. So, you have a trained image net many people have released different models for image net the ones which we have covered being included them. And now for him any image task if you want to do some processing then it's common to take the strain network pass your image through that.

So, you can train any you can use any image trained image net and pass that image through it or sorry, any trained convolutional network trained on image net and pass the image through that and you can get a representation for that image. And these are known as the fc representations and these are as the convolution representations ok, any of the convolution layers fine.