

Week-6

We learn in this week how to put the effective convolutional layer together

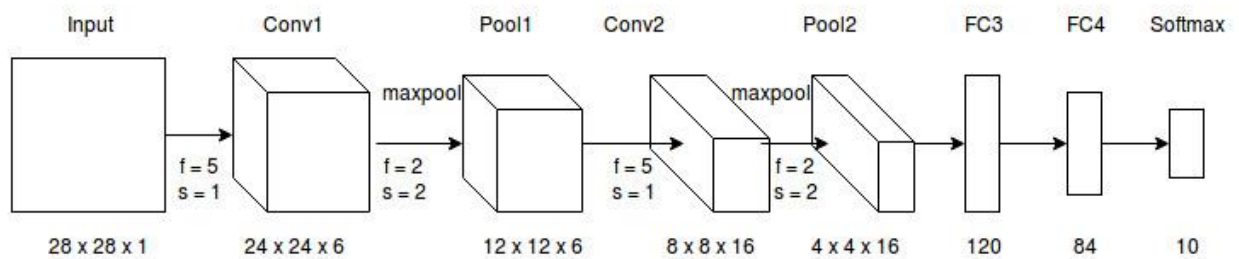
We have

- Classic network
 - Le Net-5
 - Alex Net
 - VGG
- Res Net(152)

Le Net-5

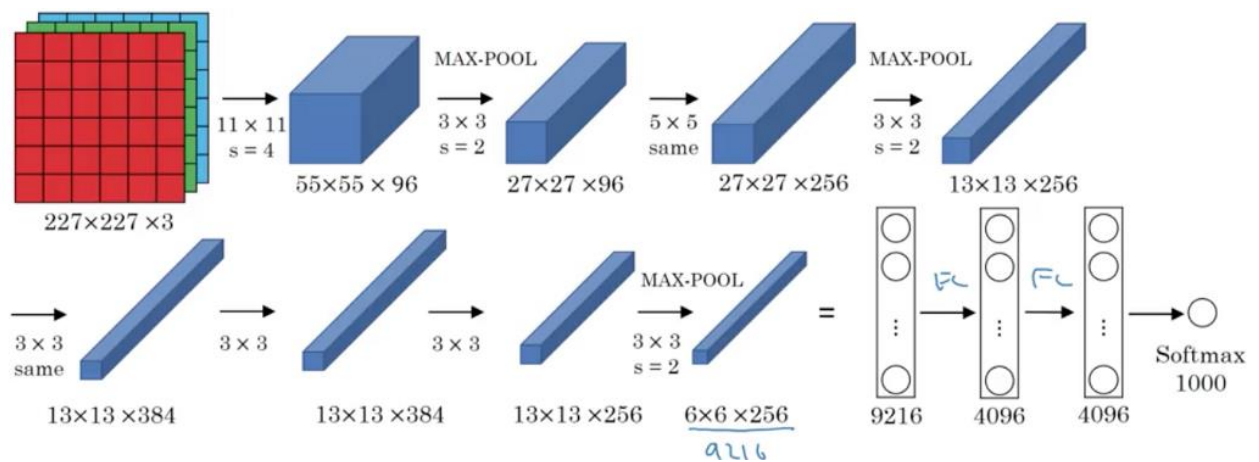
Goal: recognize hand written digits

LeNet-5 Modified

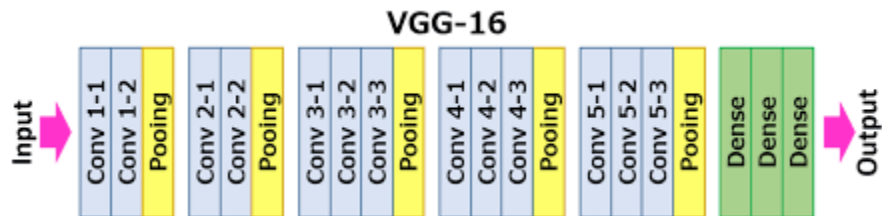


When we go from left to right the height and width tend to go down but the number of channels increase

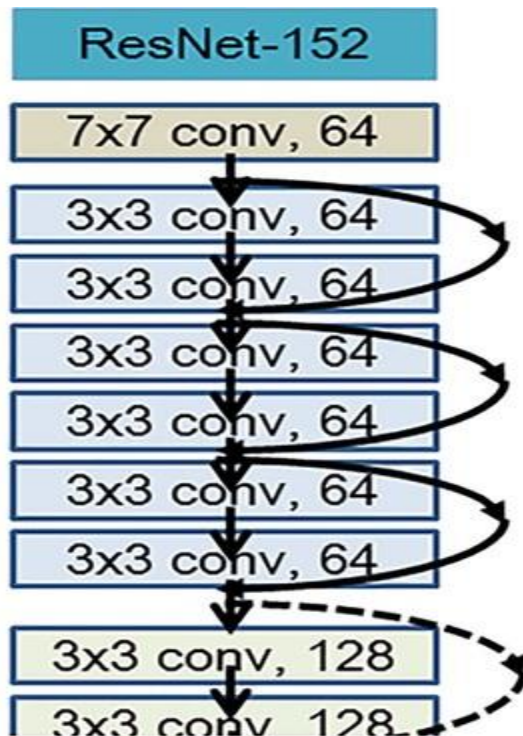
Alex Net



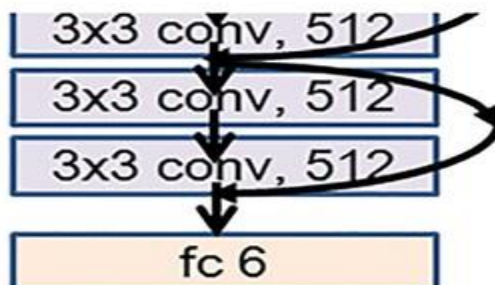
VGG-16



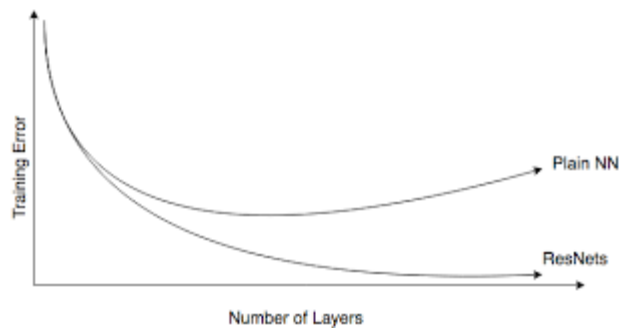
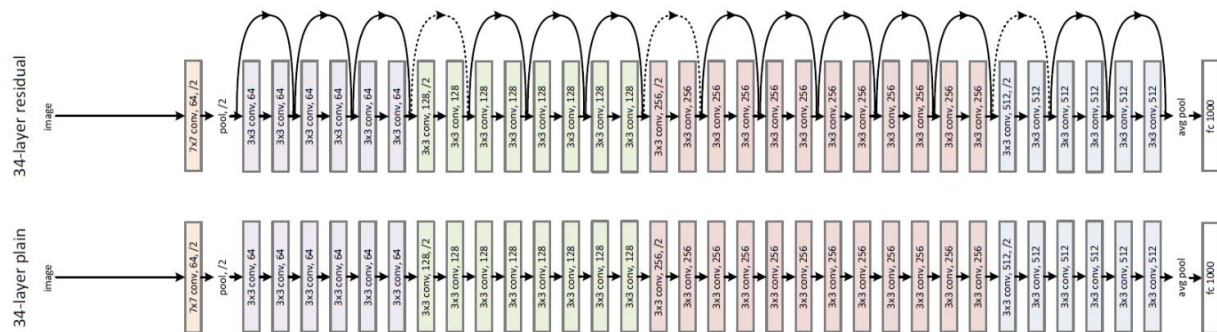
Res Nets



152 layers

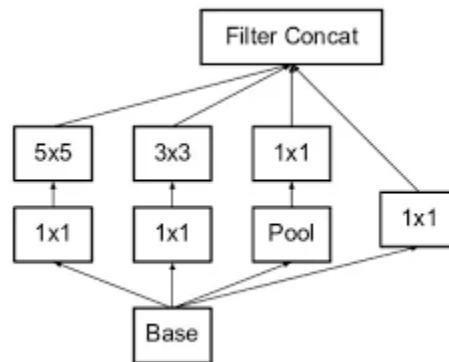


Residual network vs plain

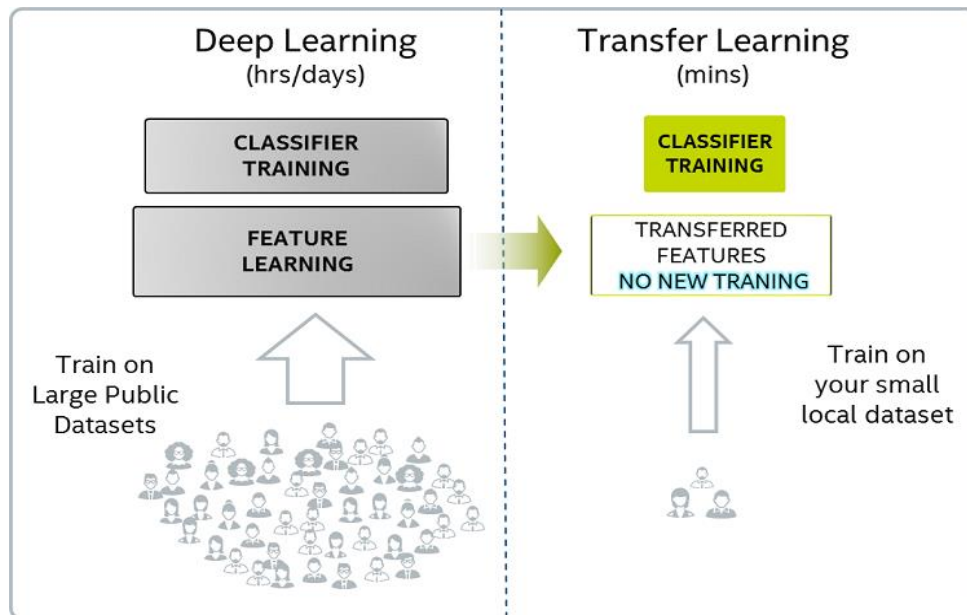


Inception network motivation

if you are building a layer of neural network, the inception module let's you concatenate all layers together and then we run the problem of computational cost



Transfer learning



Data augmentation

Mirroring

Random cropping

Color shifting

The state of computer vision

Tips for doing well on bench marks/wining competition

Ensembling

Train several networks independent and average their output

Multi crop at test time run classifier on multiple version of test images and average results