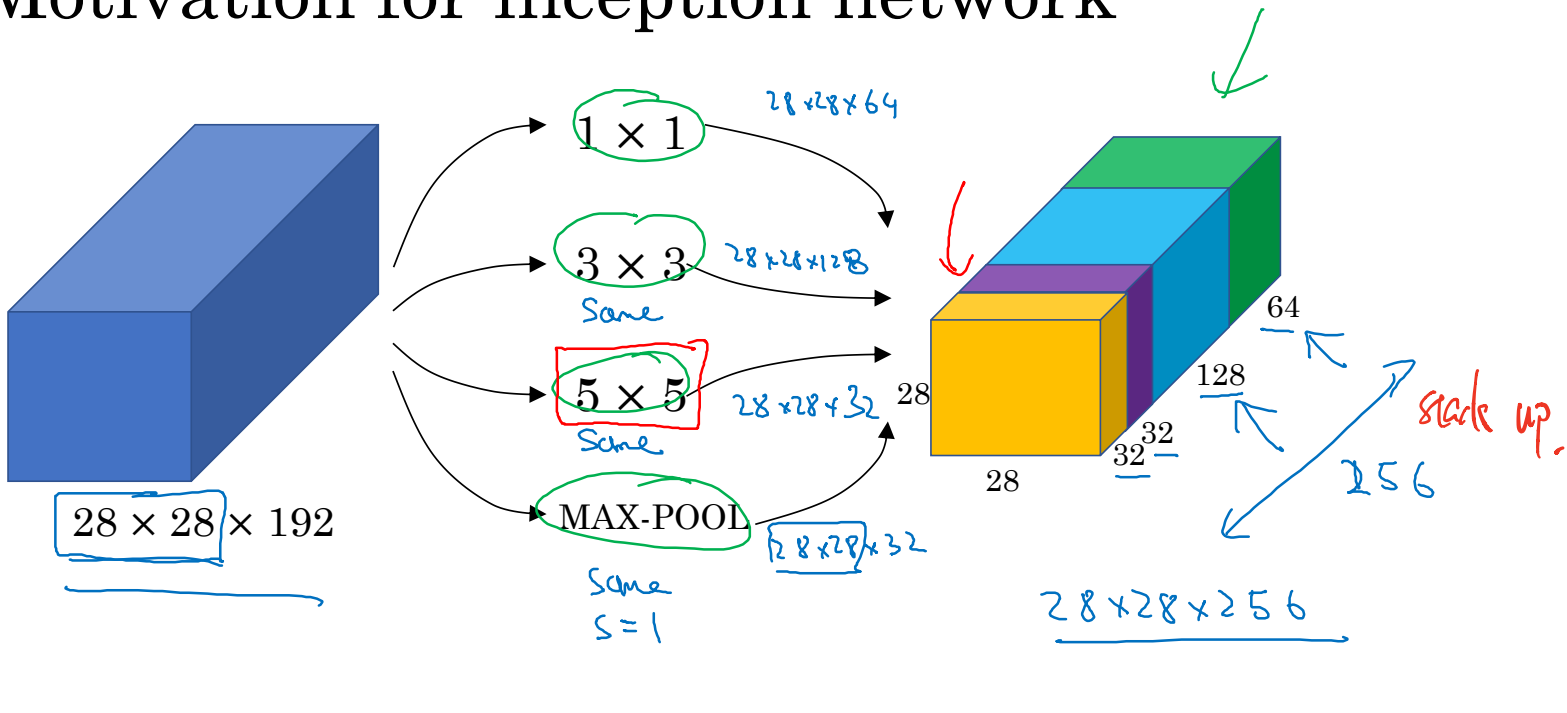
deeplearning.ai

Case Studies

Inception network motivation

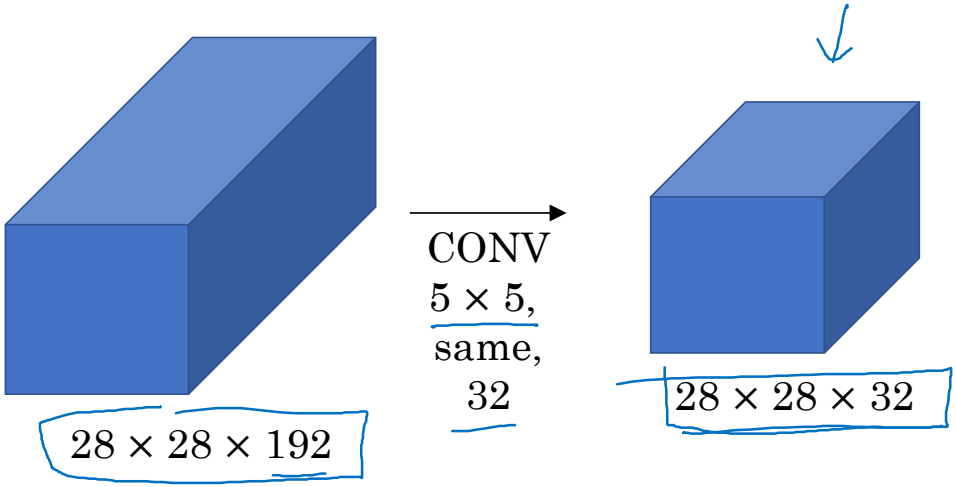
Inception nn: choosing what filter size you want in a Conv layer or even do you want a Conv layer or Pooling layer.

Motivation for inception network



[Szegedy et al. 2014. Going deeper with convolutions]

The problem of computational cost



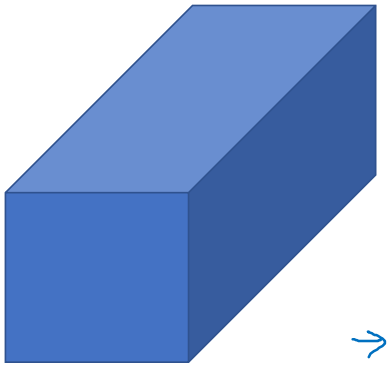
32 filters. filter one 5×5×192.

28×28×32 × 5×5×192 = 120M.

Using 1×1 convolution

(reduce the computational costs)

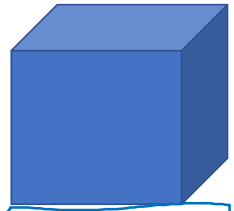
"bottleneck layer"



28 × 28 × 192

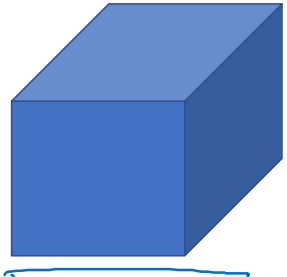
shrink Nc

CONV
1 × 1,
16,
1 × 1 × 192



28 × 28 × 16

CONV
5 × 5,
32,
5 × 5 × 16



28 × 28 × 32

28×28×16 × 192 = 2.4M

28×28×32 × 5×5×16 = 10.0M

12.4M

120M