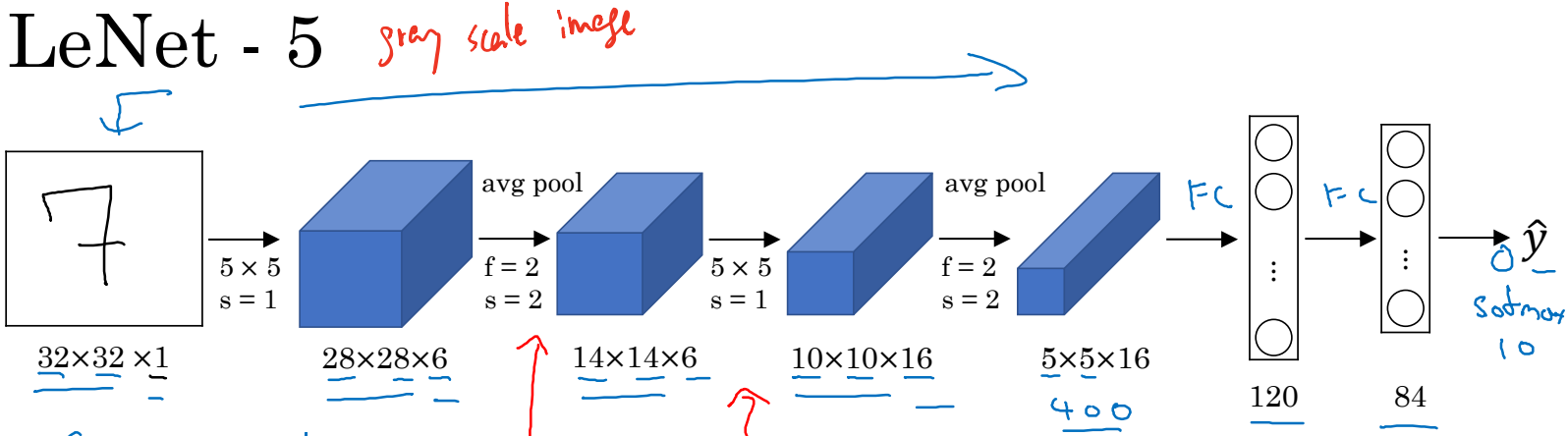
deeplearning.ai

Case Studies

Classic networks

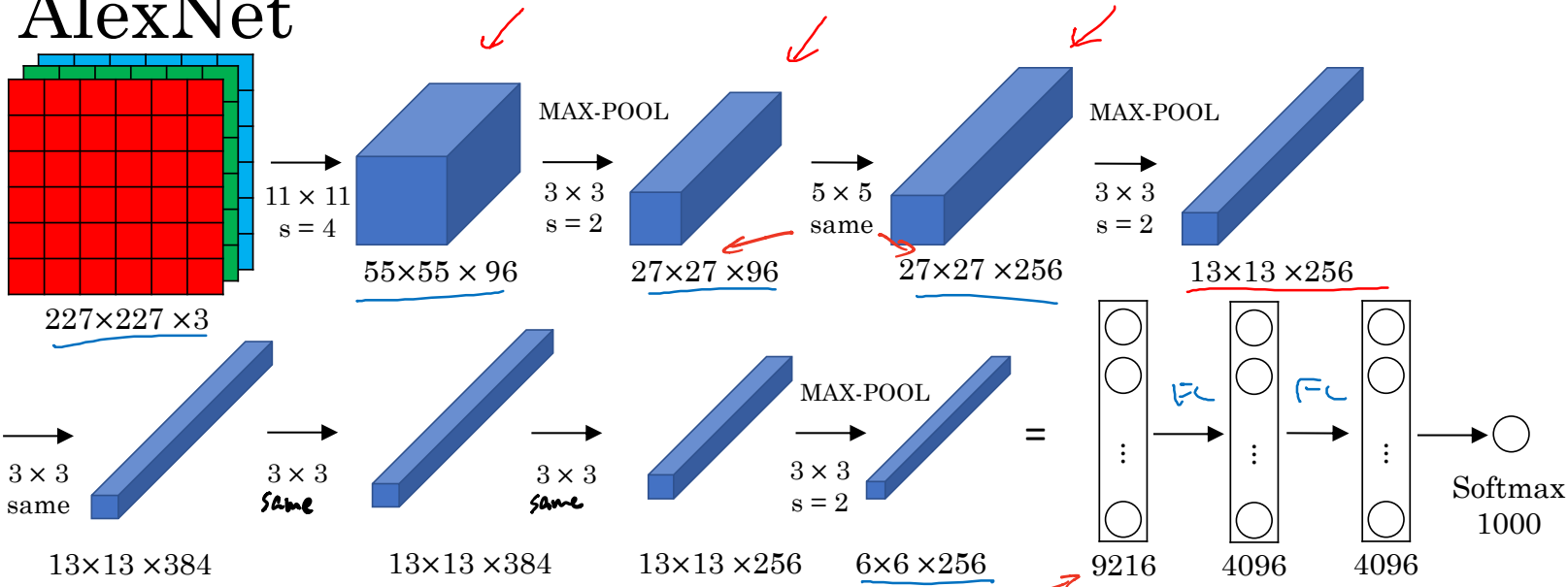
LeNet - 5



[LeCun et al., 1998. Gradient-based learning applied to document recognition]

Andrew Ng

AlexNet



- Similar to LeNet, but much bigger.
- ReLU
- Multiple GPUs.
- Local Response Normalization (LRN)

60M parameters

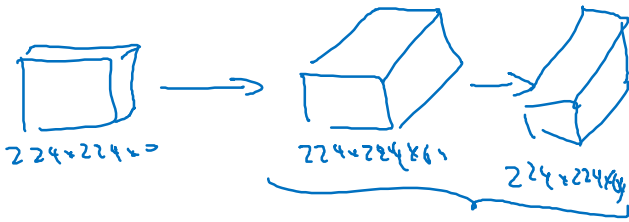
[Krizhevsky et al., 2012. ImageNet classification with deep convolutional neural networks]

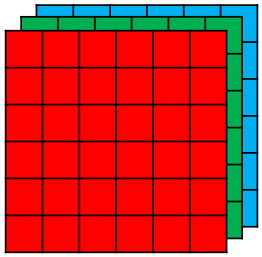
VGG - 16

VGG-16

CONV = 3×3 filter, s = 1, same

MAX-POOL = 2×2 , s = 2





224×224 ×3

2 conv layers with 64 filter

[CONV 64] ×2

224×224×64 → POOL → 112×112 ×64

[CONV 128] ×2

112×112 ×128 → POOL → 56×56 ×128

[CONV 256] ×3

56×56 ×256 → POOL → 28×28 ×256

[CONV 512] × 3

28×28 ×512 → POOL → 14×14×512

[CONV 512] ×3

14×14 ×512 → POOL → 7×7×512 → FC 4096 → FC 4096 → Softmax 1000

n_H, n_W ↓/2

n_c ↑ x2

~138M

[Simonyan & Zisserman 2015. Very deep convolutional networks for large-scale image recognition]