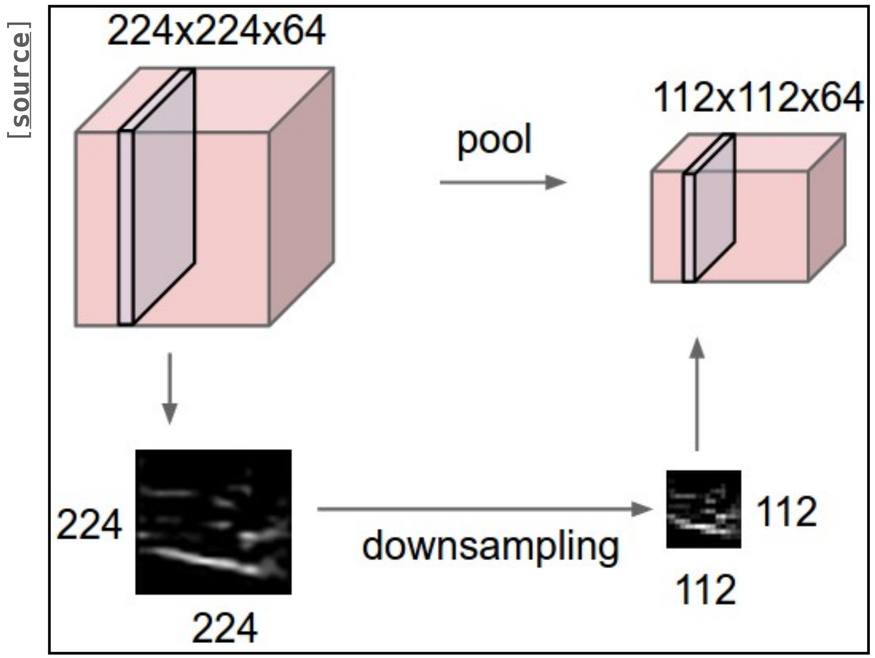
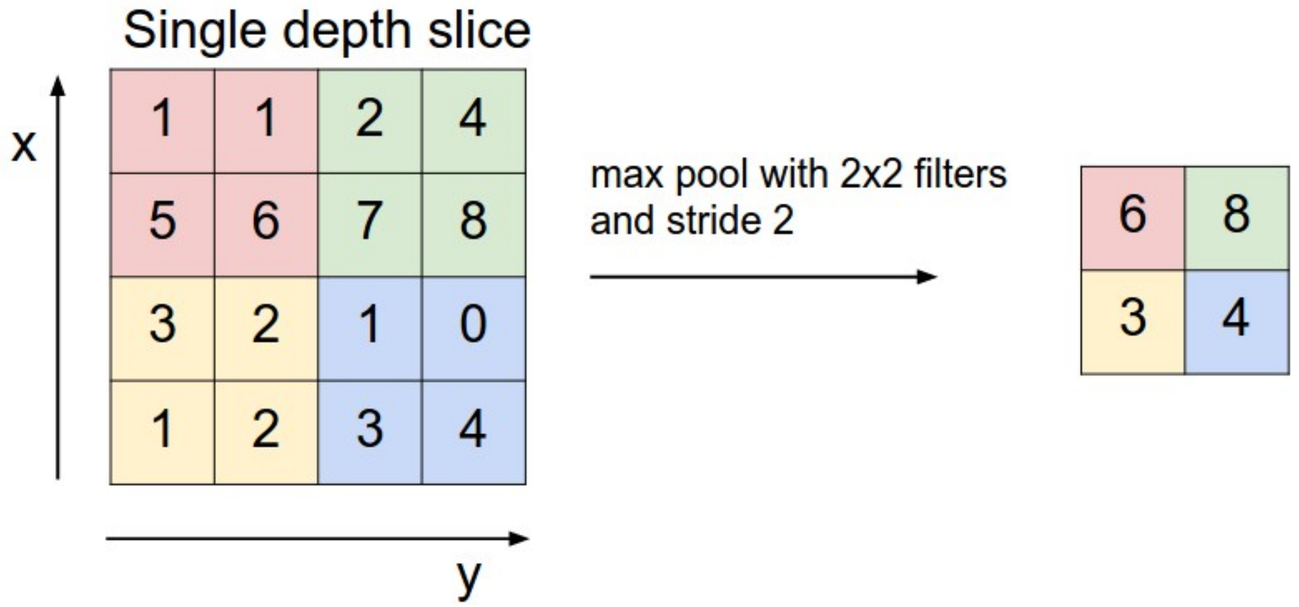
Image Classification with Convolutional Networks

pooling

- Downsample feature maps
- Max pooling works best because when looking for a feature it is better to look at the maximal presence rather than the average presence
- It's best practice to do un-strided convolutions then downsample with maxpooling rather than using strides to downsample





Almost done for today…

Aspect	Forward Pass	Backward Pass
Direction	Input → Hidden Layers → Output	Output → Hidden Layers → Input
Purpose	Calculate output and loss	Update weights and biases to reduce loss
Mathematics	Linear transformations and activations	Gradients and chain rule
Focus	Prediction	Learning (optimization)

what are Epochs?

- refers to one complete pass through the entire training dataset by the model. During this
  1. the model sees every single example in the training dataset once.
  2. It tries to learn by adjusting its weights through forward passes (making predictions) and backward passes (updating weights using the errors).
- more epochs = more practice = better learning
  (up to a point; too many epochs can lead to overfitting)