

# Convolutional Neural Networks

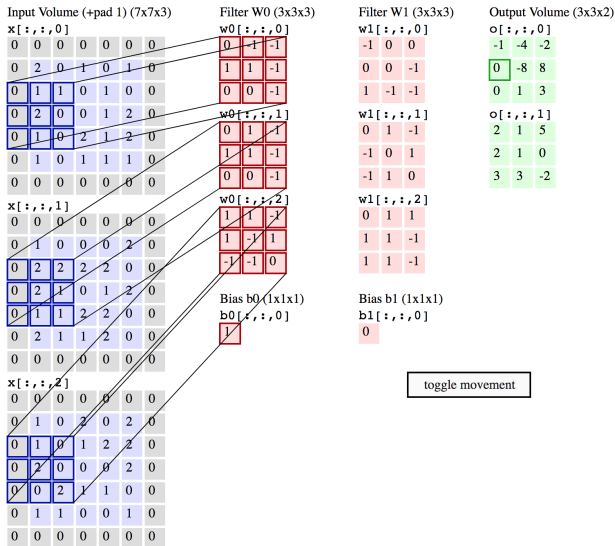
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# CNN: Overview

- Applications: image classification, facial recognition, feature generation, etc.
- *Receptive fields of single neurons in the cat's striate cortex* (Hubel, 1959)
- Filters specialize to search for local patterns in an image
- See <http://cs231n.github.io/convolutional-networks/>

# Convolution

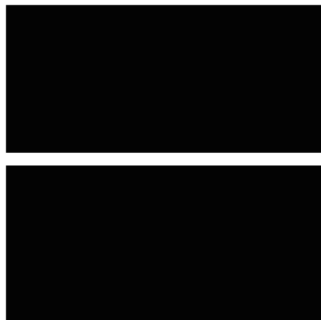


# Filters

Vertical Filter



Horizontal Filter



# Filters: Example

Actual Image



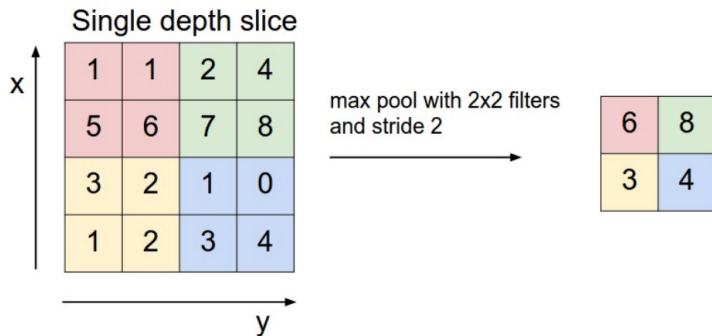
Vertical Filter



Horizontal Filter



# Pooling



# Pooling: Example

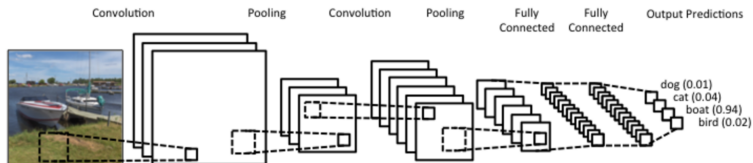
Actual Image



Max Pooling



# Convolutional Neural Network



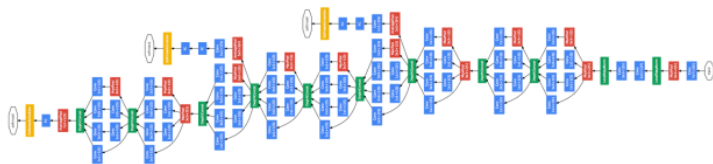


# Convolutional Neural Network: Example



# Famous CNNs

- AlexNet
- Inception
- GoogLeNet
- ResNet



# Inception: Example

