

Dimensionality

Given an input layer of width W and depth D , we have a stride of S , a padding of P , and a kernel of size K . The following formula gives us the width of the next layer: $(W - K + 2P) / S + 1$. The output height would be $(H - K + 2P) / S + 1$. And the output depth would be equal to the number of filters: $D \times K$.

The output volume would be $(W \times H \times D) \times K$.

Knowing the dimensionality of each additional layer helps us understand how large our model is and how our decisions around filter size and stride affect the size of our network.

Convolution Output Shape

Parameters

Tensor Flow

Output Layer

Setup

Solution

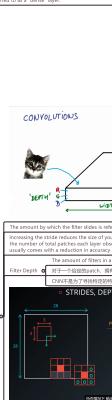
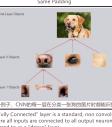
VALID Padding

SAME Padding

CONVOLUTIONS

STRIDES, DEPTH & PADDING

Filters



Lesson 5: Convolutional Neural Networks

Pooling Mechanics Quiz

Input Layer

Max Pooling

Average Pooling

Common Architectures

Recent datasets are so big and complex we're more concerned about understanding

Recently, pooling layers have fallen out of favor

Matrix Multiplication

Matrix Calculations

AVERAGE POOLING

Improving CNN

