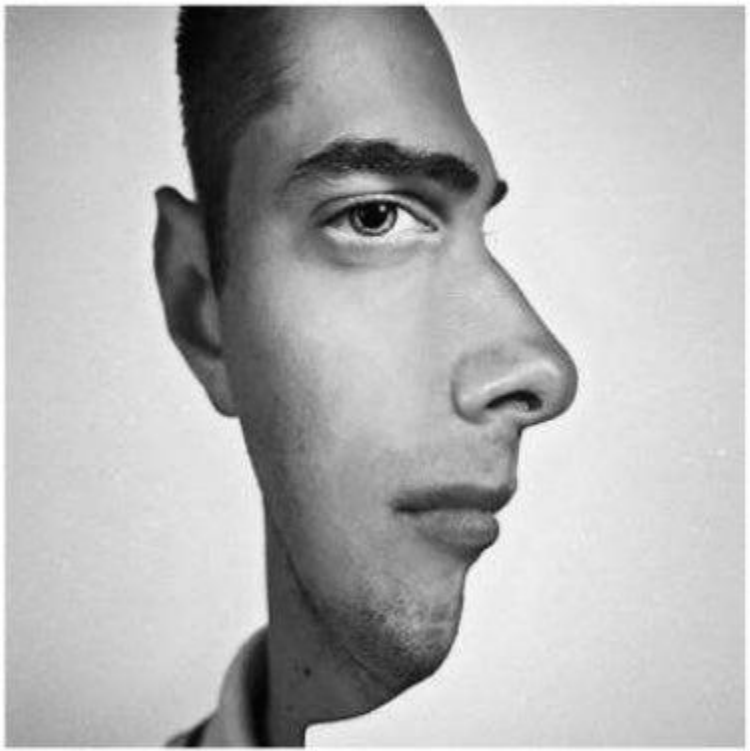
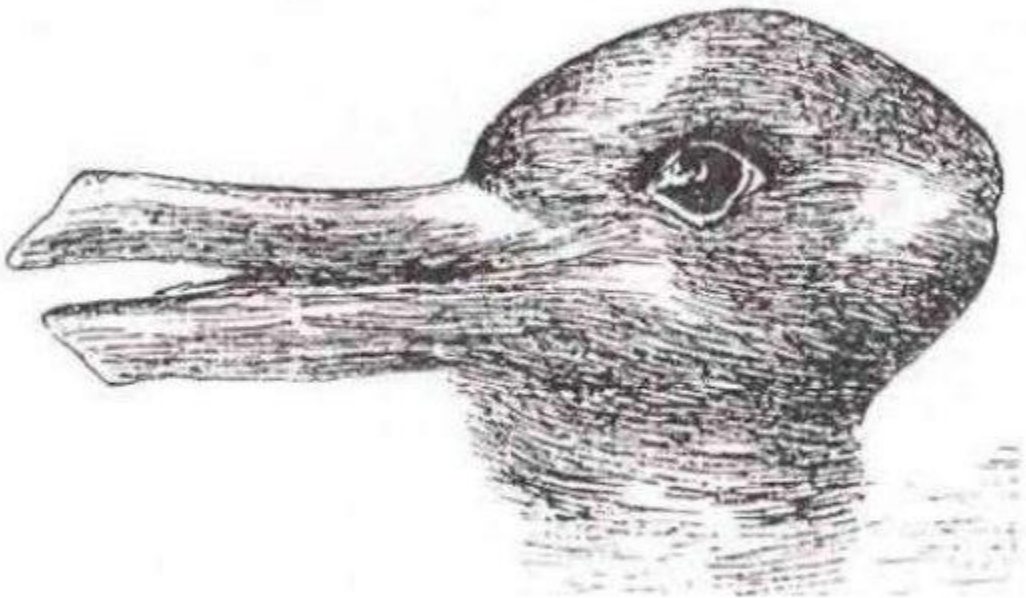
What are convolutional neural networks?

Convolutional Neural Networks



Convolutional Neural Networks

Convolutional Neural Networks



Convolutional Neural Networks

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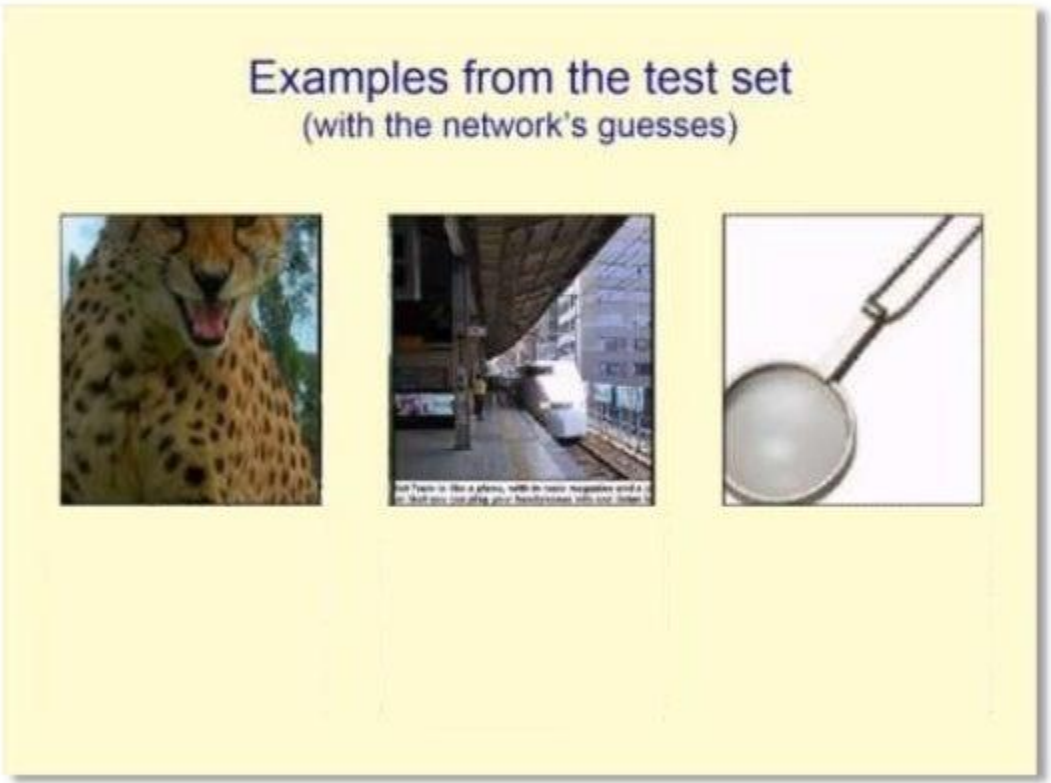
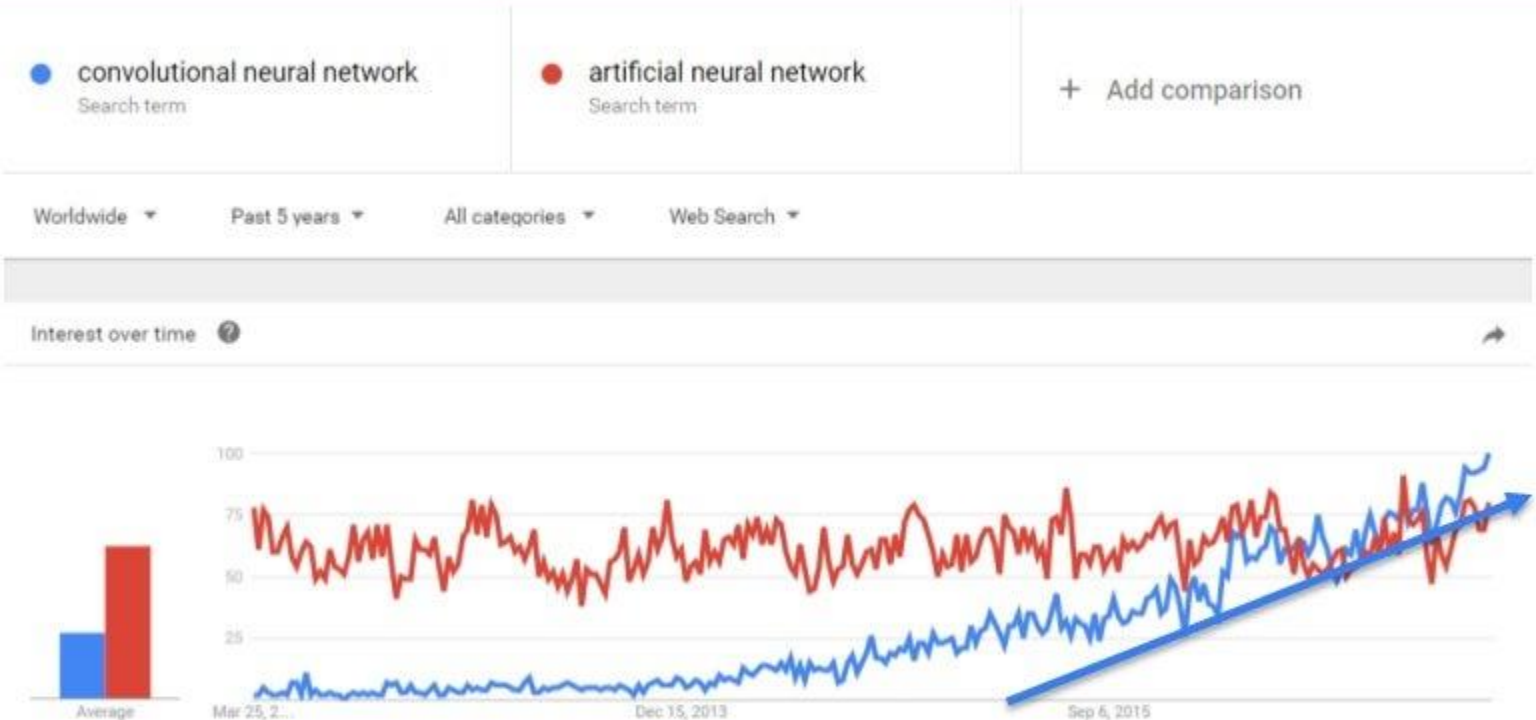


Image Source: a talk by Geoffrey Hinton

Convolutional Neural Networks



Source: google trends

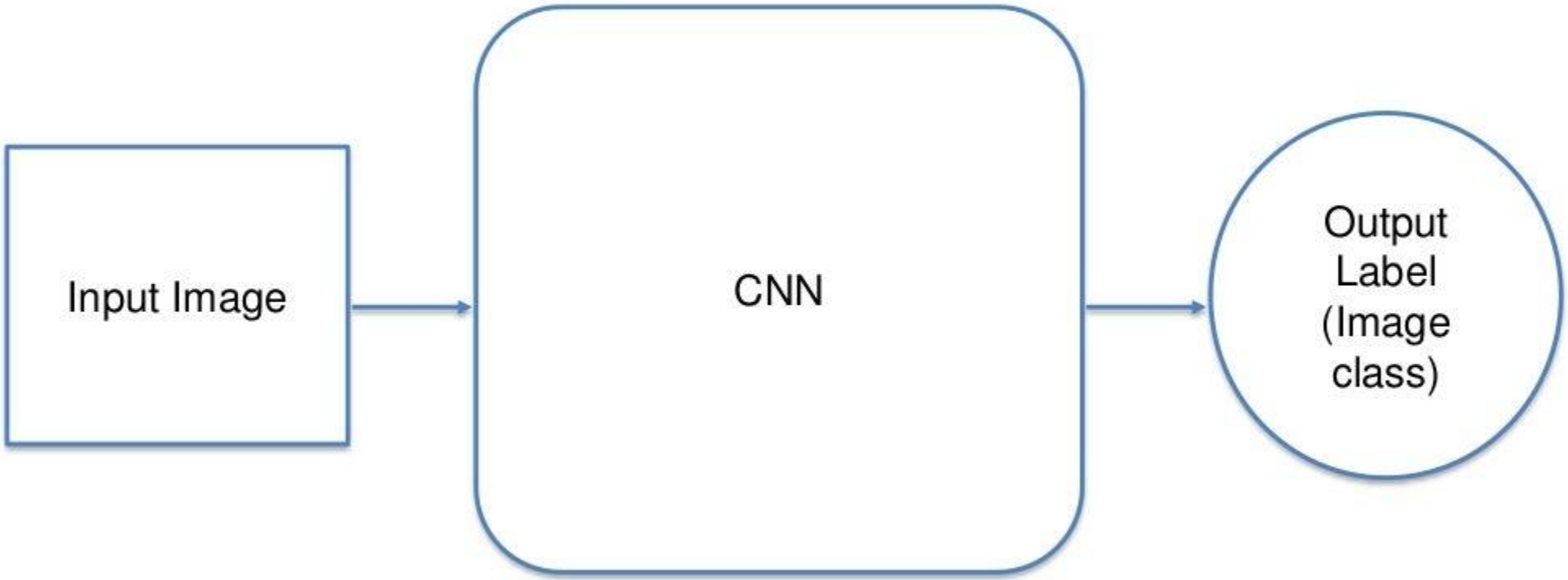
Convolutional Neural Networks

Yann Lecun

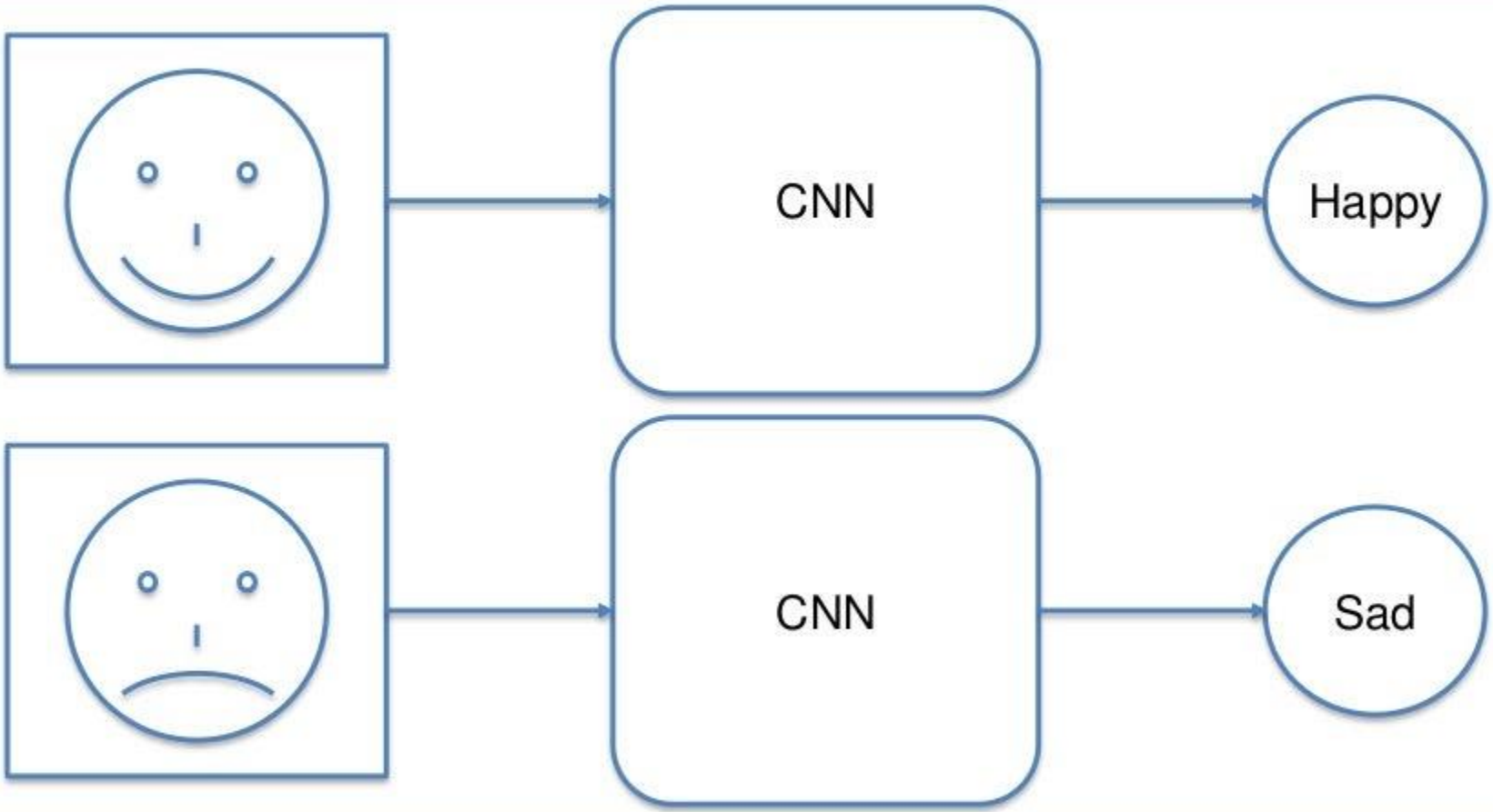
Convolutional Neural Networks

Google Facebook

Convolutional Neural Networks

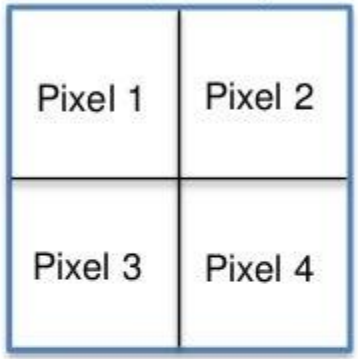


Convolutional Neural Networks



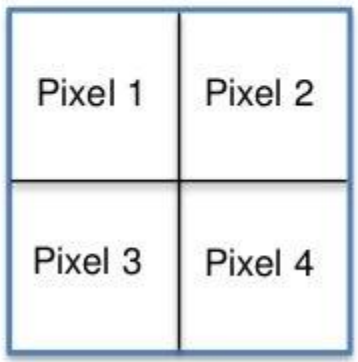
Convolutional Neural Networks

B / W Image 2x2px



2d array

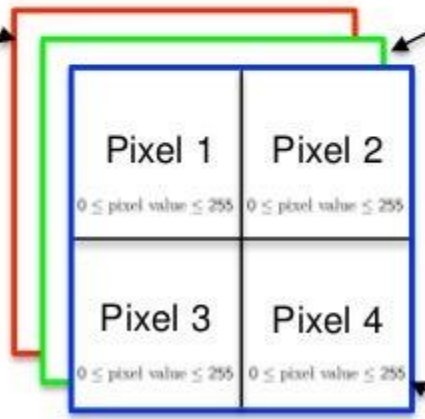
Colored Image 2x2px



3d array

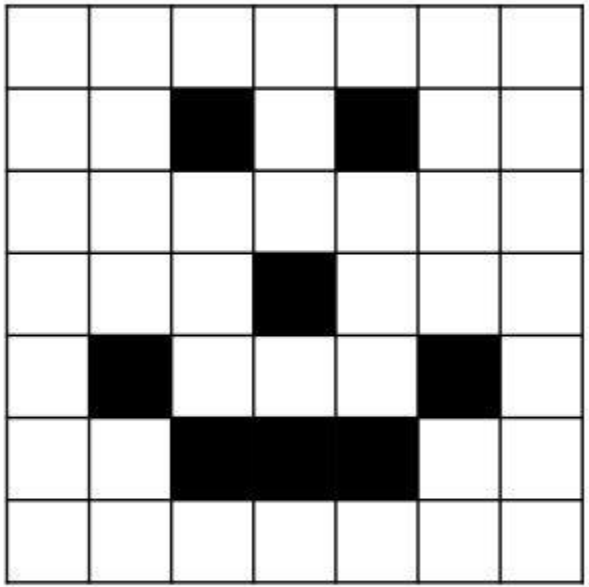
Red channel

Green channel



Blue channel

Convolutional Neural Networks



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0	0	0	0	0	0	0

Convolutional Neural Networks

STEP 1: Convolution

STEP 2: Max Pooling

STEP 3: Flattening

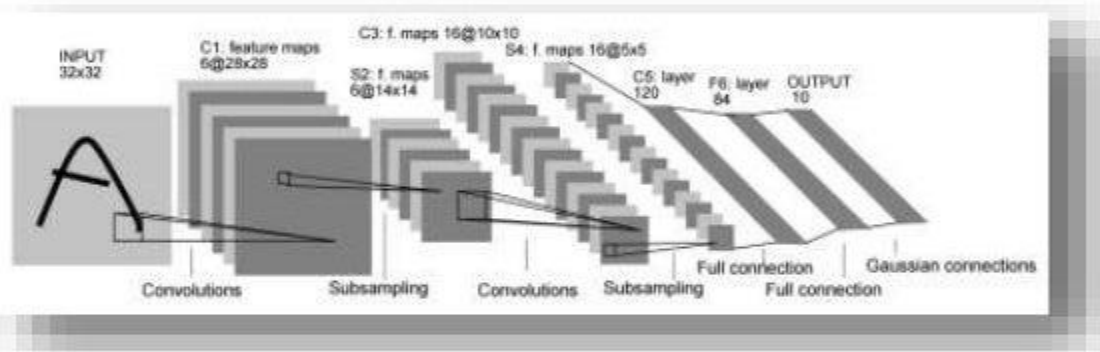
STEP 4: Full Connection

Convolutional Neural Networks

Additional Reading:

Gradient-Based Learning Applied to Document Recognition

By Yann LeCun et al. (1998)



Link:

http://yann.lecun.com/exdb/publis/pdf/lecun-01a.pdf