

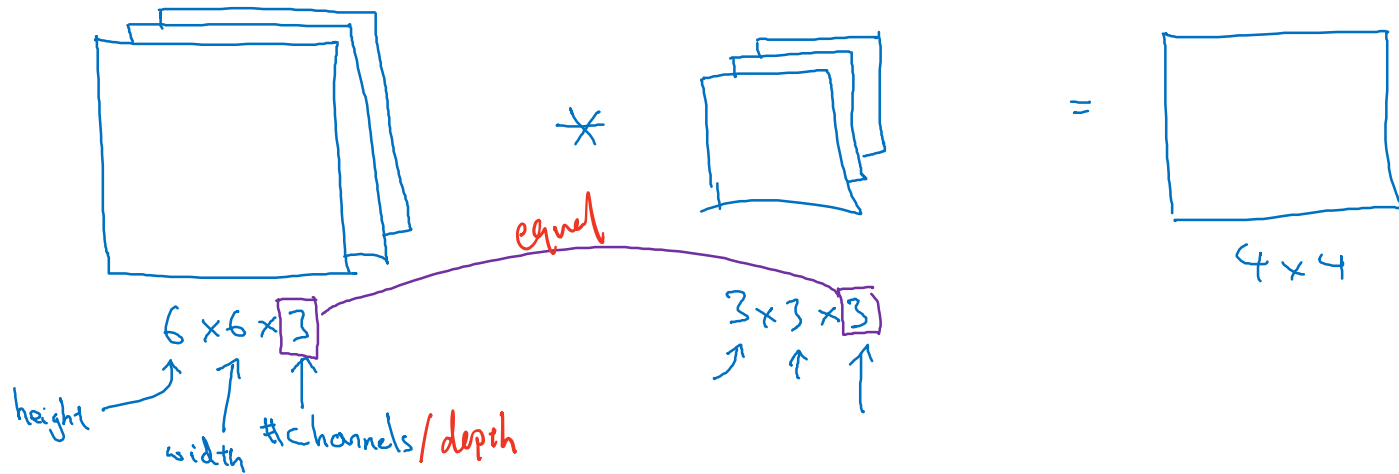


deeplearning.ai

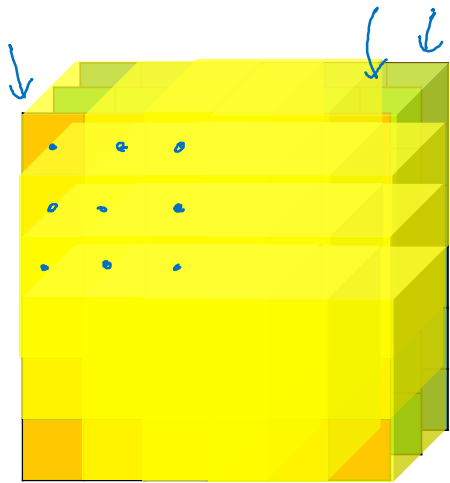
Convolutional Neural Networks

Convolutions over volumes

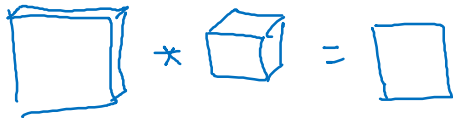
Convolutions on RGB images



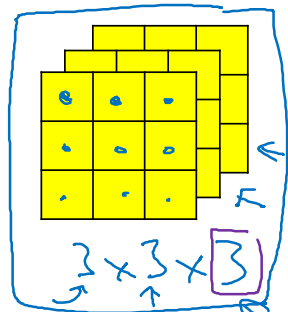
Convolutions on RGB image



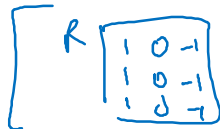
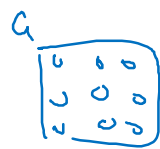
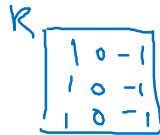
$6 \times 6 \times 3$
 $\uparrow \quad \uparrow \quad \uparrow$



*



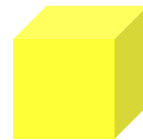
27 numbers



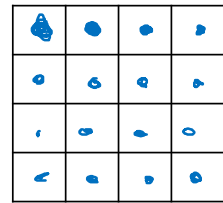
only in red channel
 $\rightarrow 3 \times 3 \times 3$



all
 $\rightarrow 3 \times 3 \times 3$

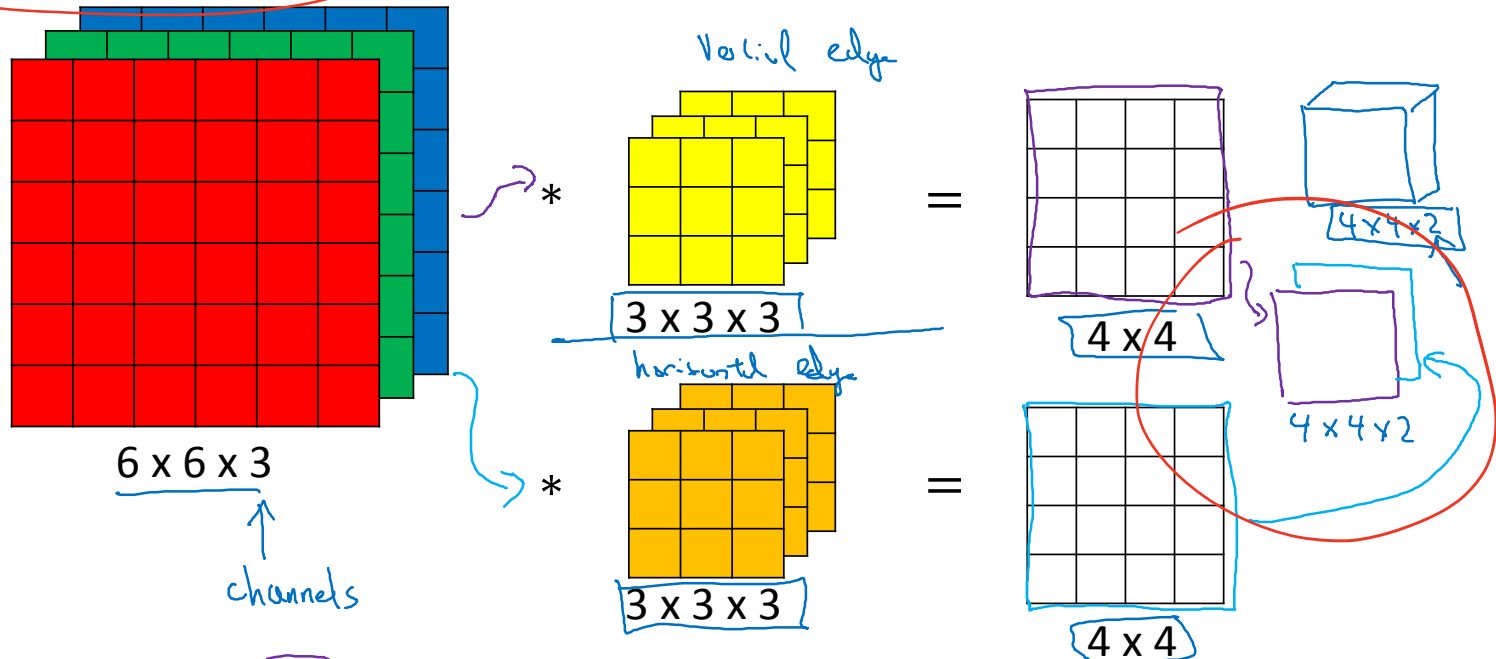


=



4 x 4

Multiple filters



Summary: $n \times n \times n_c$ \times $f \times f \times n_c$ \rightarrow $\frac{n-f+1}{4} \times \frac{n-f+1}{4} \times 2 \times \frac{n_c}{2}$

$6 \times 6 \times 3$ $3 \times 3 \times 3$ $4 \times 4 \times 2$ #filters