

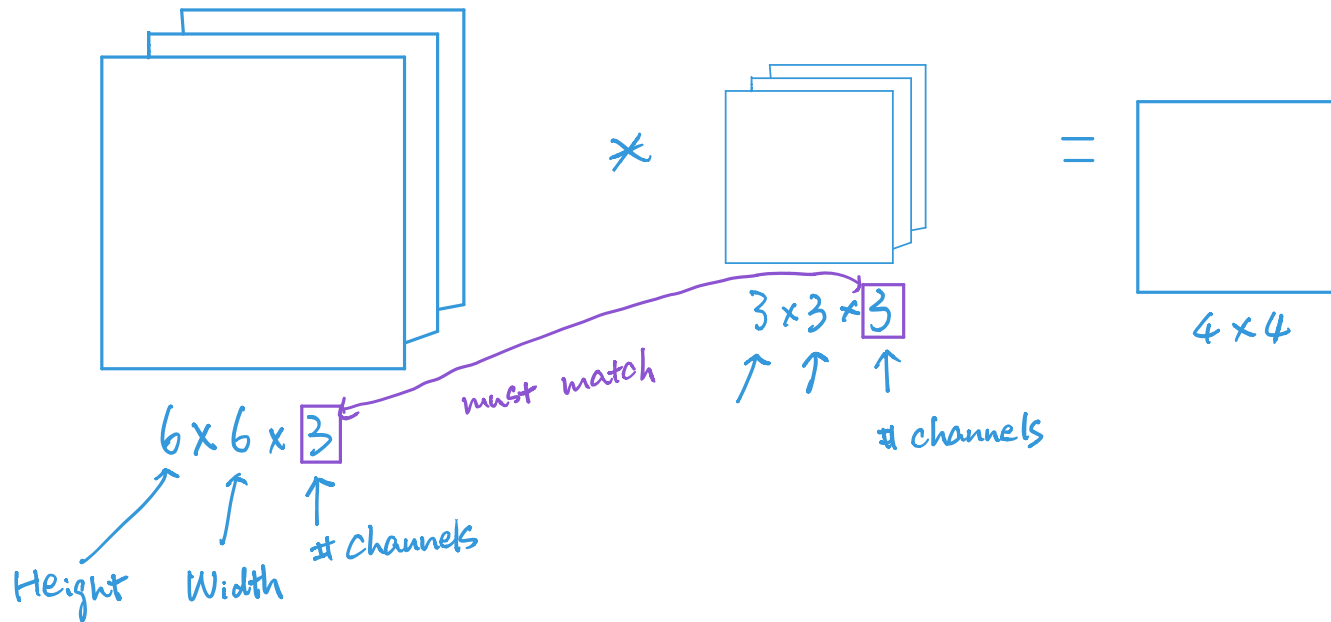


deeplearning.ai

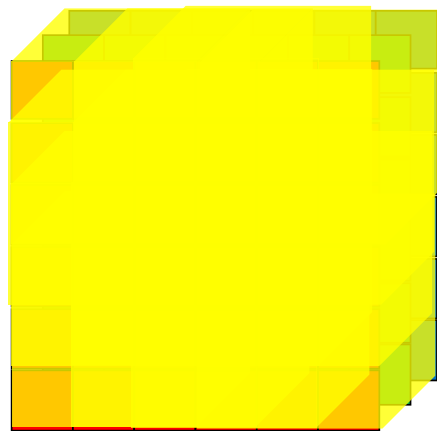
Convolutional Neural Networks

Convolutions over volumes

Convolutions on RGB images



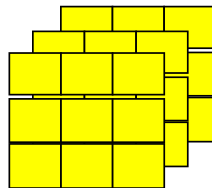
Convolutions on RGB image



$6 \times 6 \times 3$

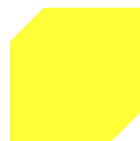


\times

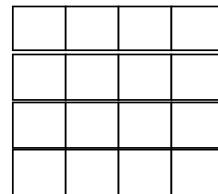


$3 \times 3 \times 3$

27 numbers



$=$



4×4

K

1	0	-1
1	0	-1
1	0	-1
1	0	-1
1	0	-1
1	0	-1

G

0	0	0
0	0	0
0	0	0
1	0	-1
1	0	-1
1	0	-1

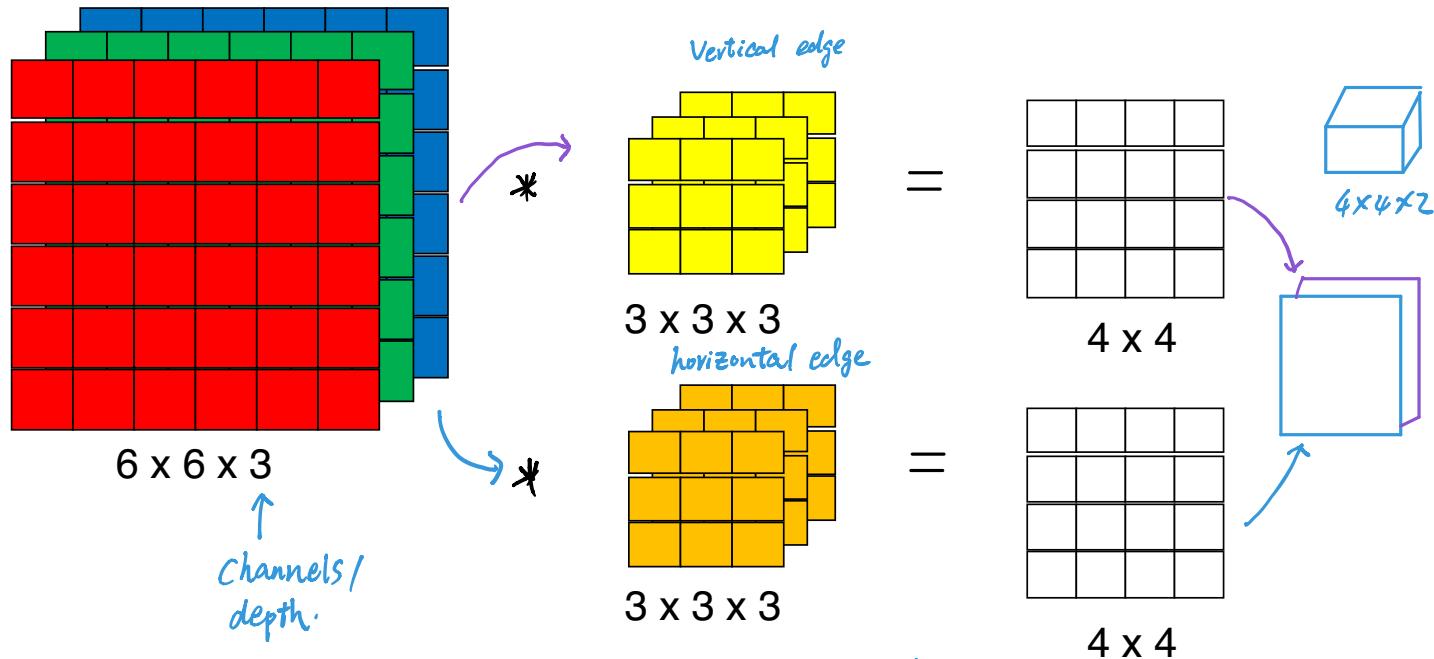
B

0	0	0
0	0	0
0	0	0
1	0	-1
1	0	-1
1	0	-1

$\rightarrow 3 \times 3 \times 3$

$\rightarrow 3 \times 3 \times 3$

Multiple filters



Summary: $n \times n \times n_c$ * $f \times f \times n_c$ \longrightarrow $n-f+1 \times n-f+1 \times n_c$
 $6 \times 6 \times 3$ $3 \times 3 \times 3$ $4 \times 4 \times 2$ \uparrow # of filters