Case Studies

Network in Network
and 1×1 convolutions

deeplearning.ai

Why does a 1 × 1 convolution do?

1	2	3	6	5	8
3	5	5	1	3	4
2	1	3	4	9	3
4	7	8	5	7	9
1	5	3	7	4	8
5	4	9	8	3	5

$6 \times 6 \times 1$

$6 \times 6 \times 32$

$*$ 2 $=$
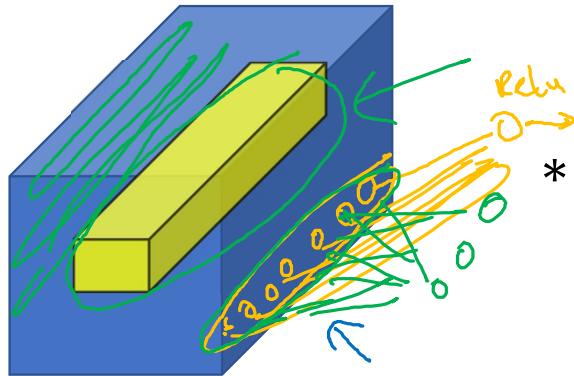
$1 \times 1 \times 32$

ReLu

$32 \rightarrow$ # filters.

$n_c^{[l+1]}$
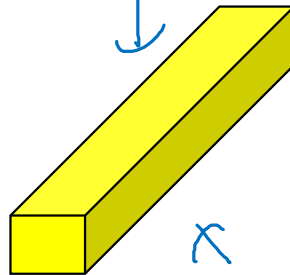
ReLU

Network in Network

2	4	6	...		

$6 \times 6 \times$ # filters

[Lin et al., 2013. Network in network]

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Using 1×1 convolutions

ReLU

CONV 1×1

~~32~~

192

$28 \times 28 \times 192$

$1 \times 1 \times 192$

32 filters.

$28 \times 28 \times$ ~~32~~ 192

n_H, n_W, n_c

[Lin et al., 2013. Network in network]

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