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When should you use a 1×1 convolution layer (i.e., the convolution filter has both width and height dimensions equal to 1)?

- ☐ Never
- ☒ When you need to adjust the number of channels between layers
- ☐ When you have grayscale images as inputs
- ☐ When you have a single input and a single output channel

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How many trainable parameters does an average pooling layer with pool size of (5, 5) have?

- ☒ 0
- ☐ 5
- ☐ 25
- ☐ Cannot be determined from the information provided

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How many trainable parameters does a maximum pooling layer with pool size of (5, 5) have?

- ☒ 0
- ☐ 5
- ☐ 25
- ☐ Cannot be determined from the information provided

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What effect does a pooling layer have on the number of channels?

- ☒ The number of output channels is the same as the number of input channels
- ☐ The number of output channels is greater than the number of input channels
- ☐ The number of output channels is less than the number of input channels
- ☐ A pooling layer cannot handle multiple input channels

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What does the "Le" in LeNet stand for?

- ☒ It's taken from name of LeNet's inventor, Yann LeCun
- ☐ Learning
- ☐ Local Embedding
- ☐ Layer Engineering

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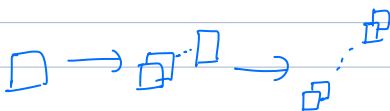
Suppose a Conv2D layer uses a kernel of spatial dimensions 5×5 and no biases. Suppose the number of input channels is 6 and the number of output channels is 16. What is the total number of trainable parameters in such a layer?

- ☐ 25
- ☐ 400
- ☐ 150
- ☒ 2400

一共有 6×16 个 

\therefore 有 $6 \times 16 \times 5 \times 5 = 2400$ 个 trainable parameters.

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In typical CNN architectures, what tends to happen to the number of channels as we move from earlier layers of processing to later ones?

- ☒ Channel numbers tends to increase
- ☐ Channel numbers tends to stay the same
- ☐ Channel numbers tends to decrease
- ☐ Channel numbers tends to increase but only for colored images

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The LeNet architecture we saw consisted for 4 types of layers: Convolution, Pooling, Flatten, and Dense. The majority of trainable parameters resided in which of these types?

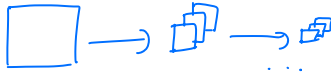
- ☒ Dense
- ☐ Convolution
- ☐ Pooling
- ☐ Flatten

(convolution: \neq
pooling & flatten: 无)

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In typical CNN architectures, what tends to happen to spatial dimensions as we move from earlier layers of processing to later ones?

- ☐ They tend to increase
- ☐ They tend to stay the same
- ☒ They tend to decrease
- ☐ CNN layers don't have spatial dimensions since everything is flattened into a long vector at the first layer



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If LeNet was to be redesigned using modern knowledge not available in the 1980s, what is one change you would expect to see?

- ☒ Use ReLU instead of sigmoid activation
- ☐ Use only Dense layers
- ☐ Train it using backpropagation
- ☐ Get rid of all Dense layers