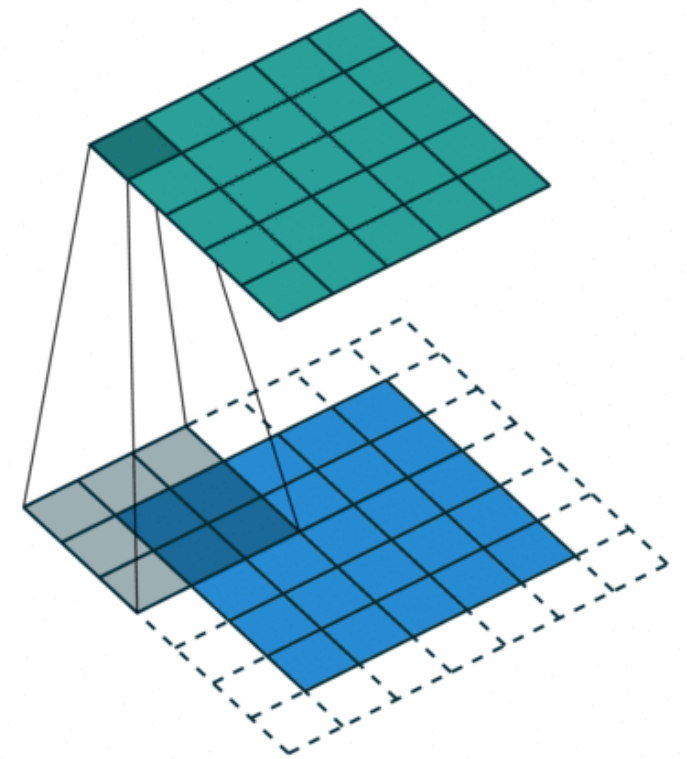
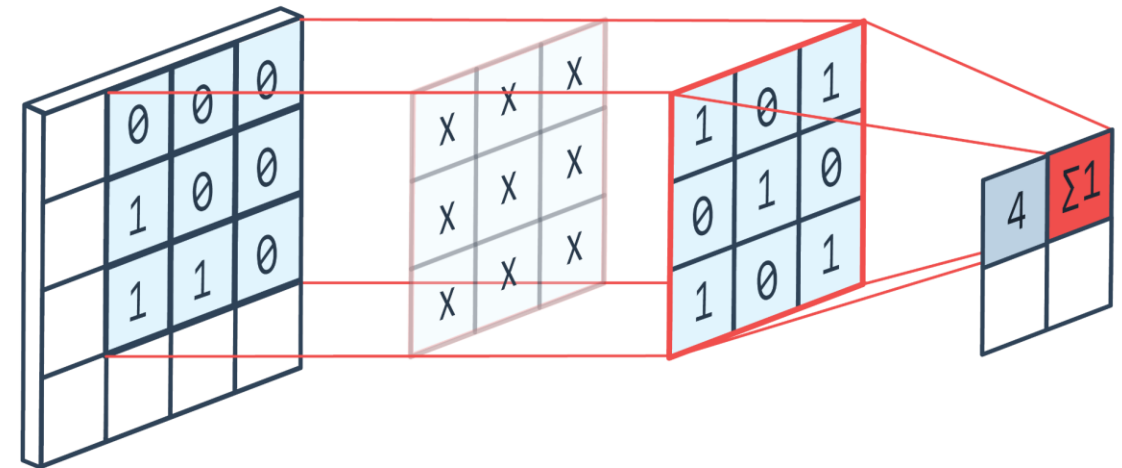
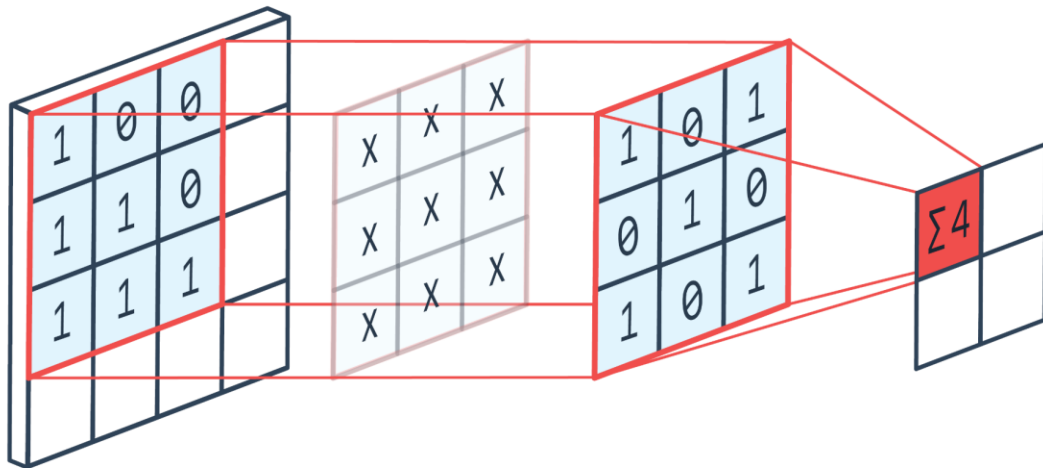


CNN

# Convolutional layer – grayscale images

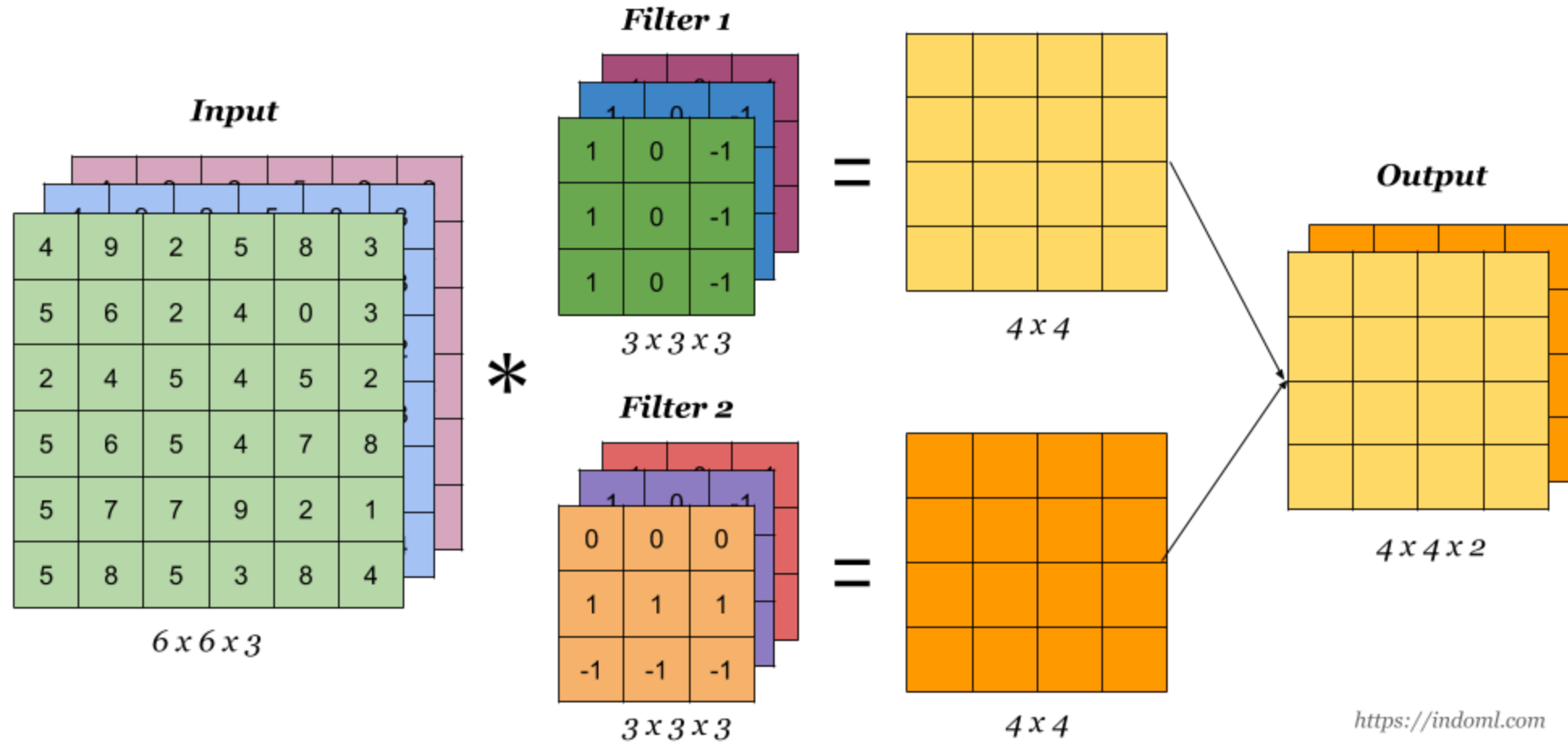


<https://towardsdatascience.com/intuitively-understanding-convolutions-for-deep-learning-1f6f42faee1>



<https://peltarion.com/knowledge-center/documentation/modeling-view/build-an-ai-model/blocks/2d-convolution-block>

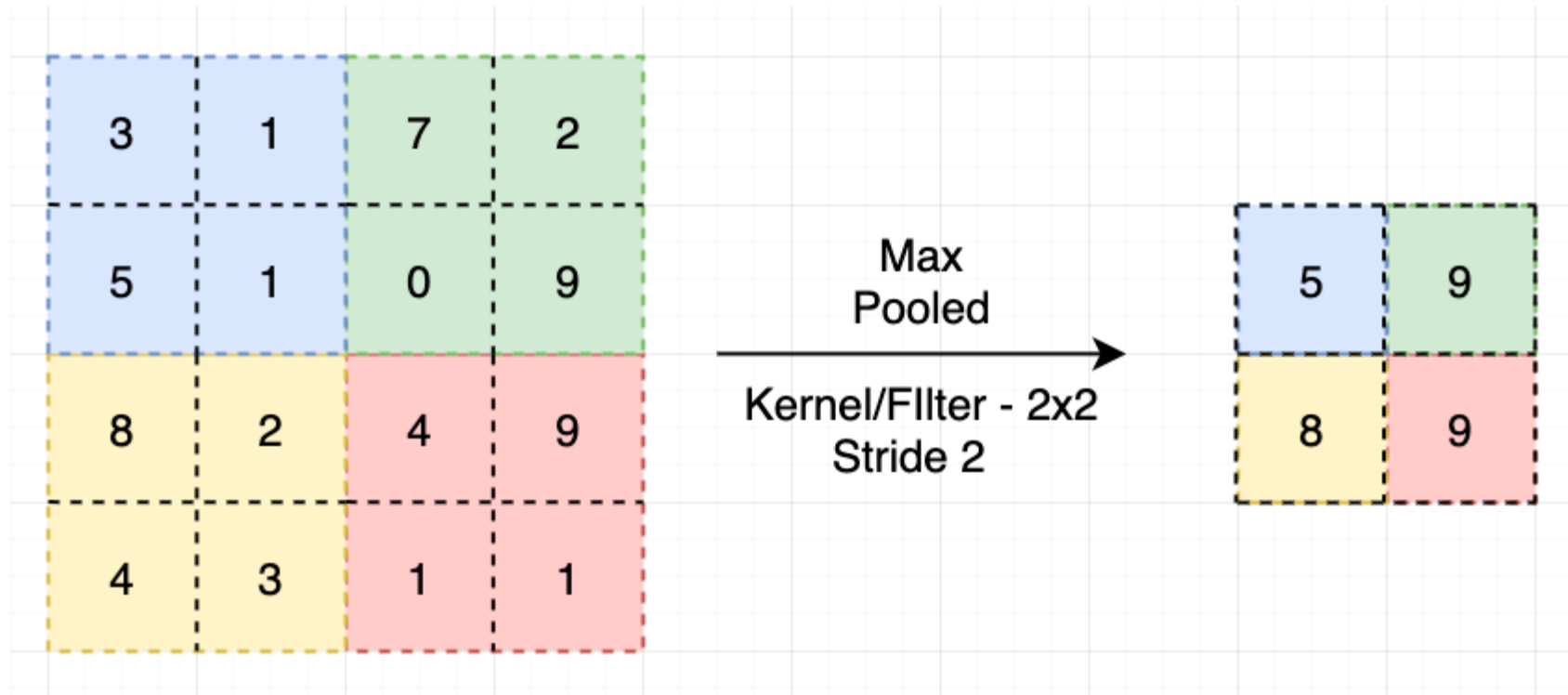
# CNN for RGB



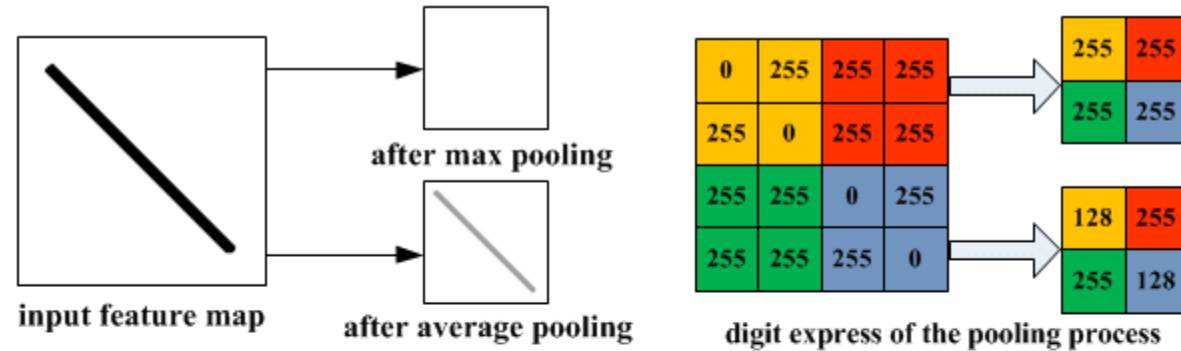
<https://indoml.com>

# Pooling

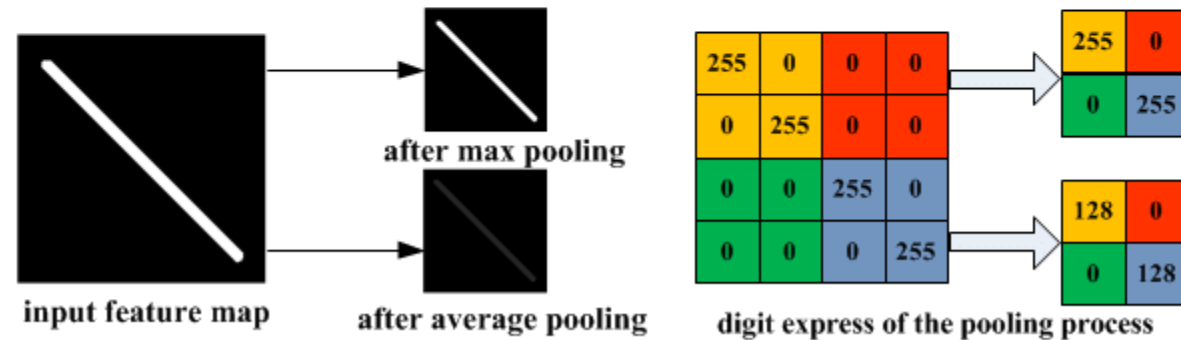
- Max/average



# Pooling drawback



(a) Illustration of max pooling drawback

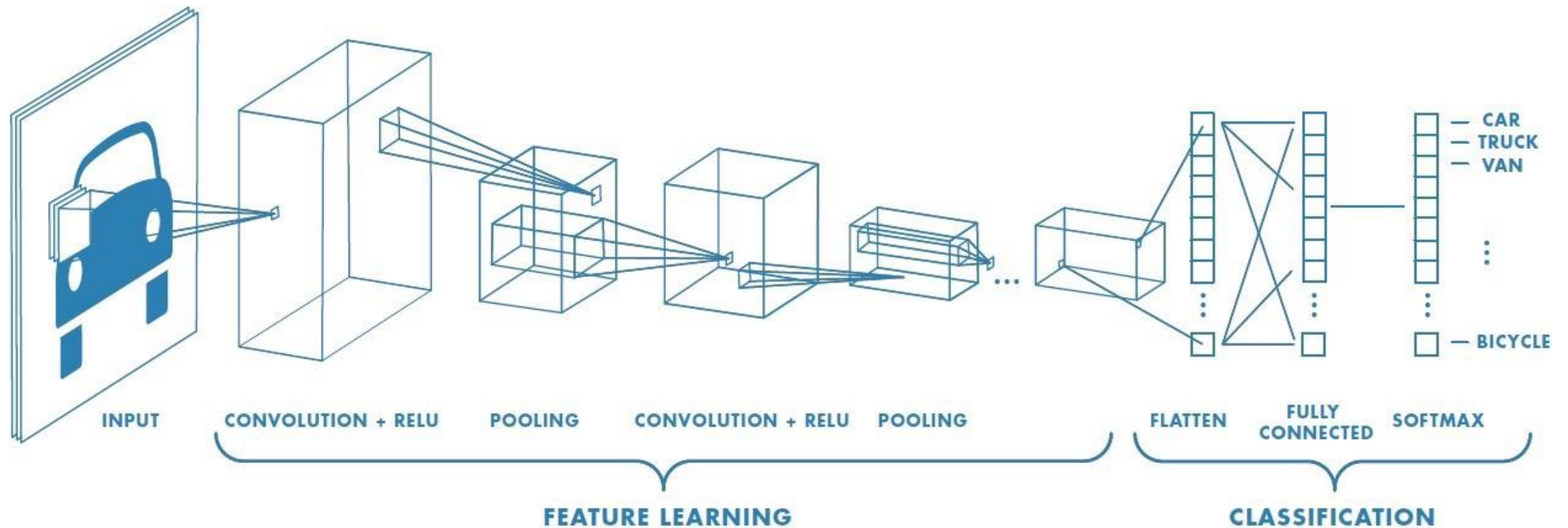


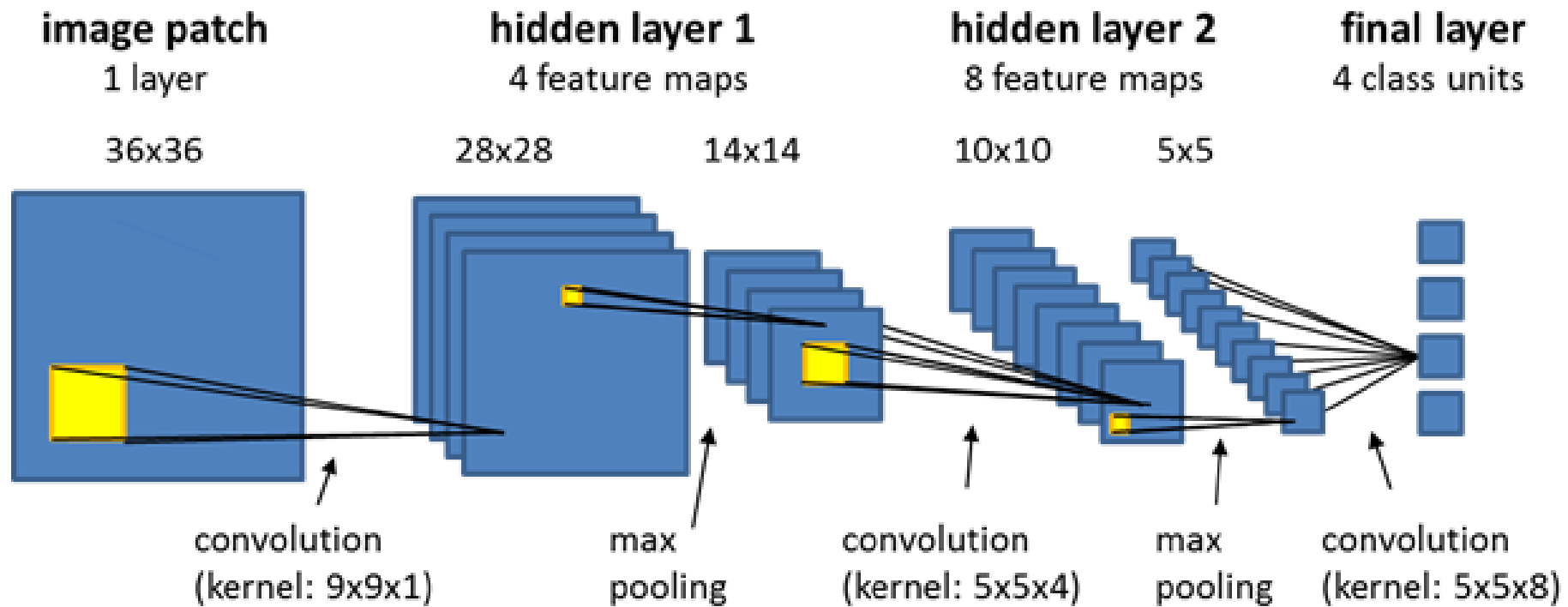
(b) Illustration of average pooling drawback

# Batch normalization

- <https://learnopencv.com/batch-normalization-in-deep-networks/>

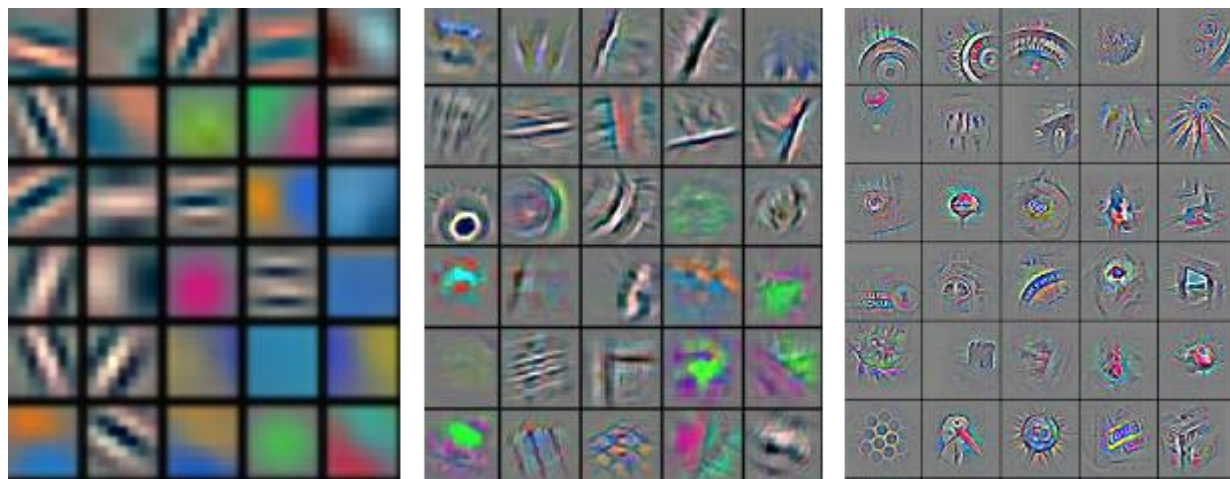
# Convolutional neural network



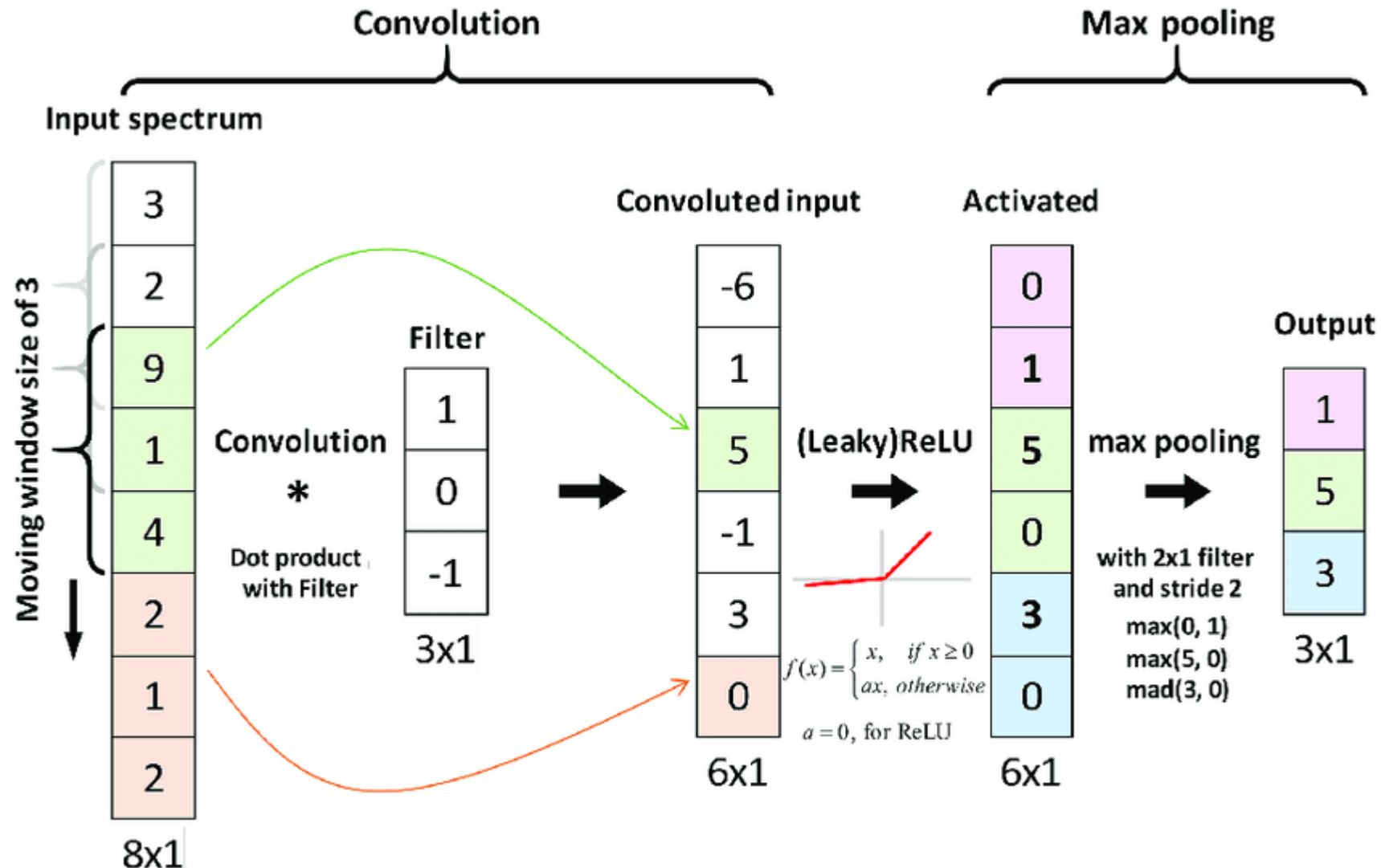




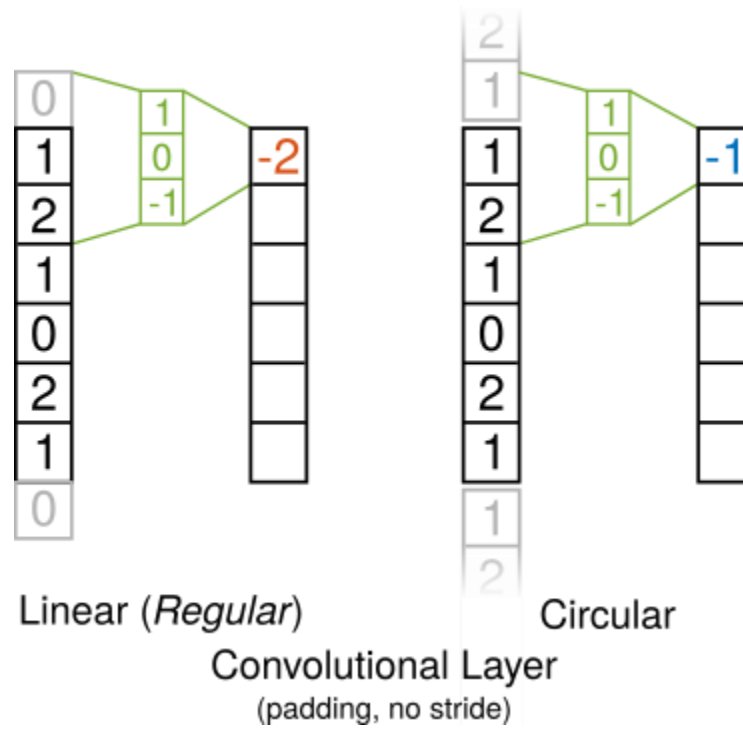
# Gabor filters



# Convolution 1D



# Padding



# CNN in keras

- <https://github.com/fchollet/deep-learning-with-python-notebooks/blob/master/5.1-introduction-to-convnets.ipynb>