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Image Segmentation

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Image Classification

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Object Detection

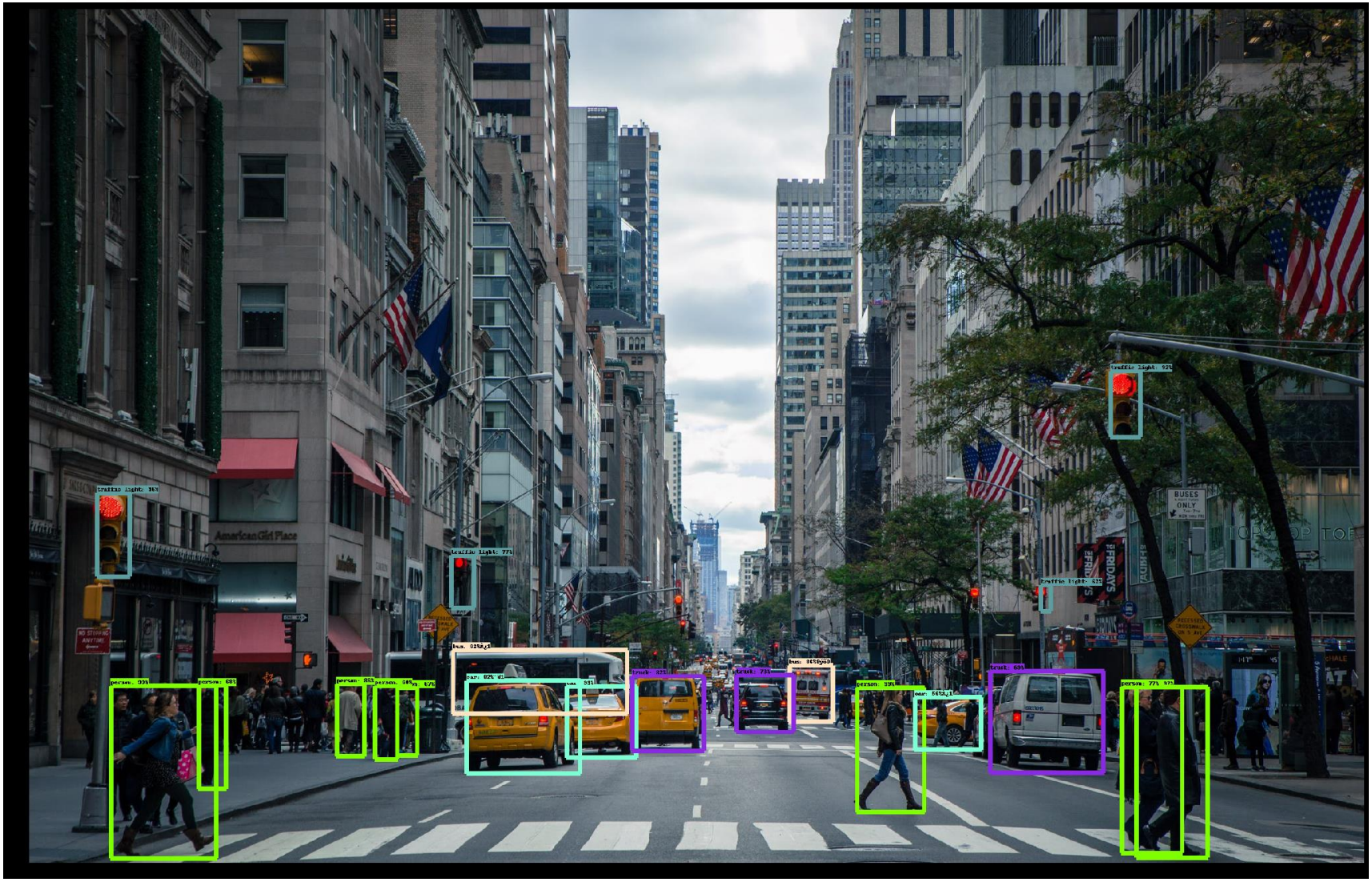

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Image Segmentation

https://www.kaggle.com/c/carvana-image-masking-challenge/

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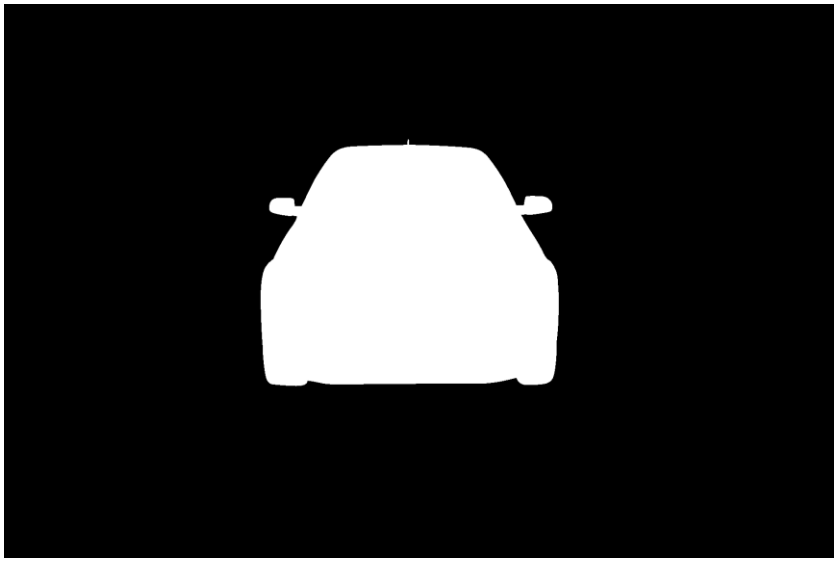
Image Segmentation

Input Data



Label

https://www.kaggle.com/c/carvana-image-masking-challenge/

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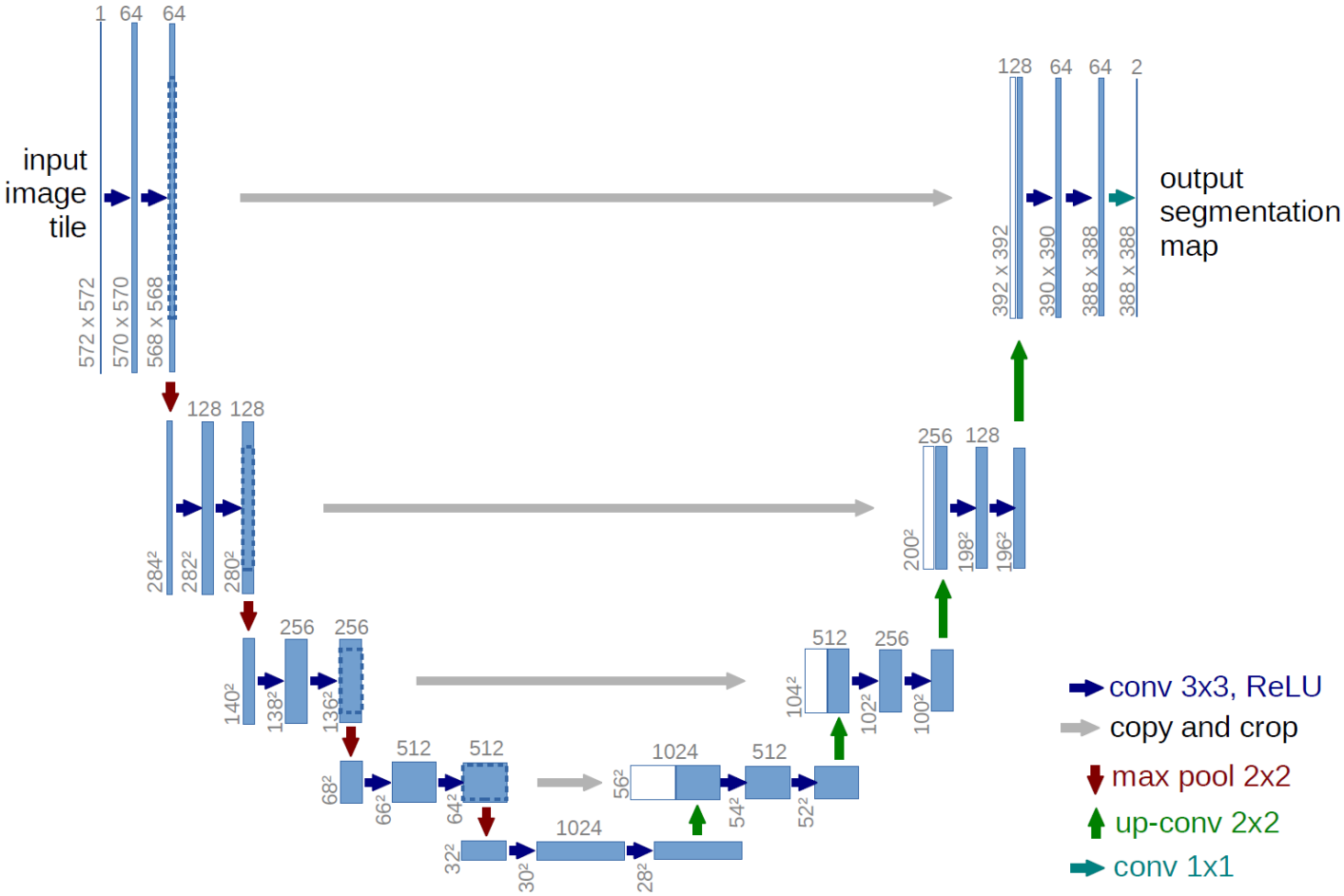
U-Net



https://www.kaggle.com/c/carvana-image-masking-challenge/

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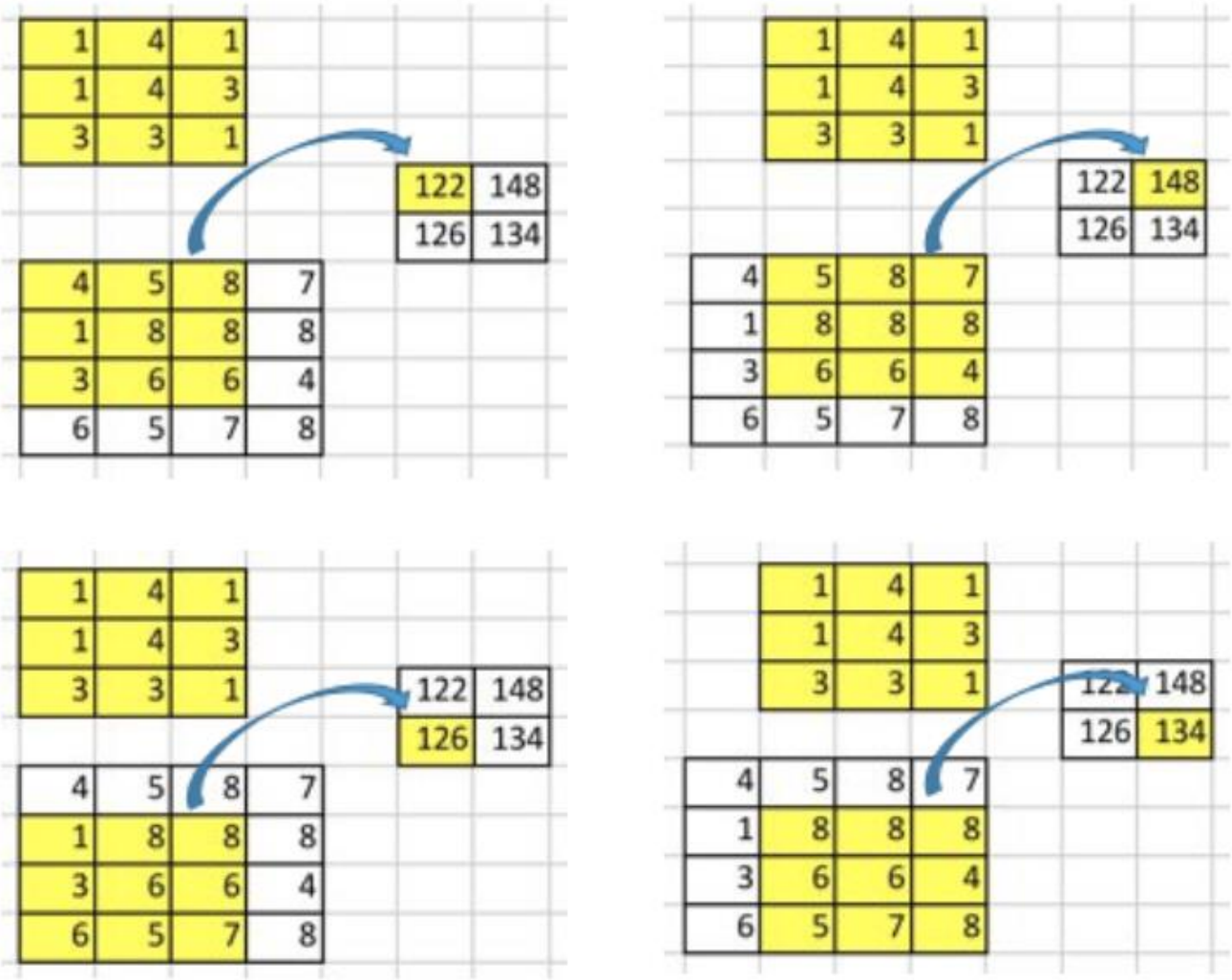
Convolution



https://towardsdatascience.com/up-sampling-with-transposed-convolution-9ae4f2df52d0

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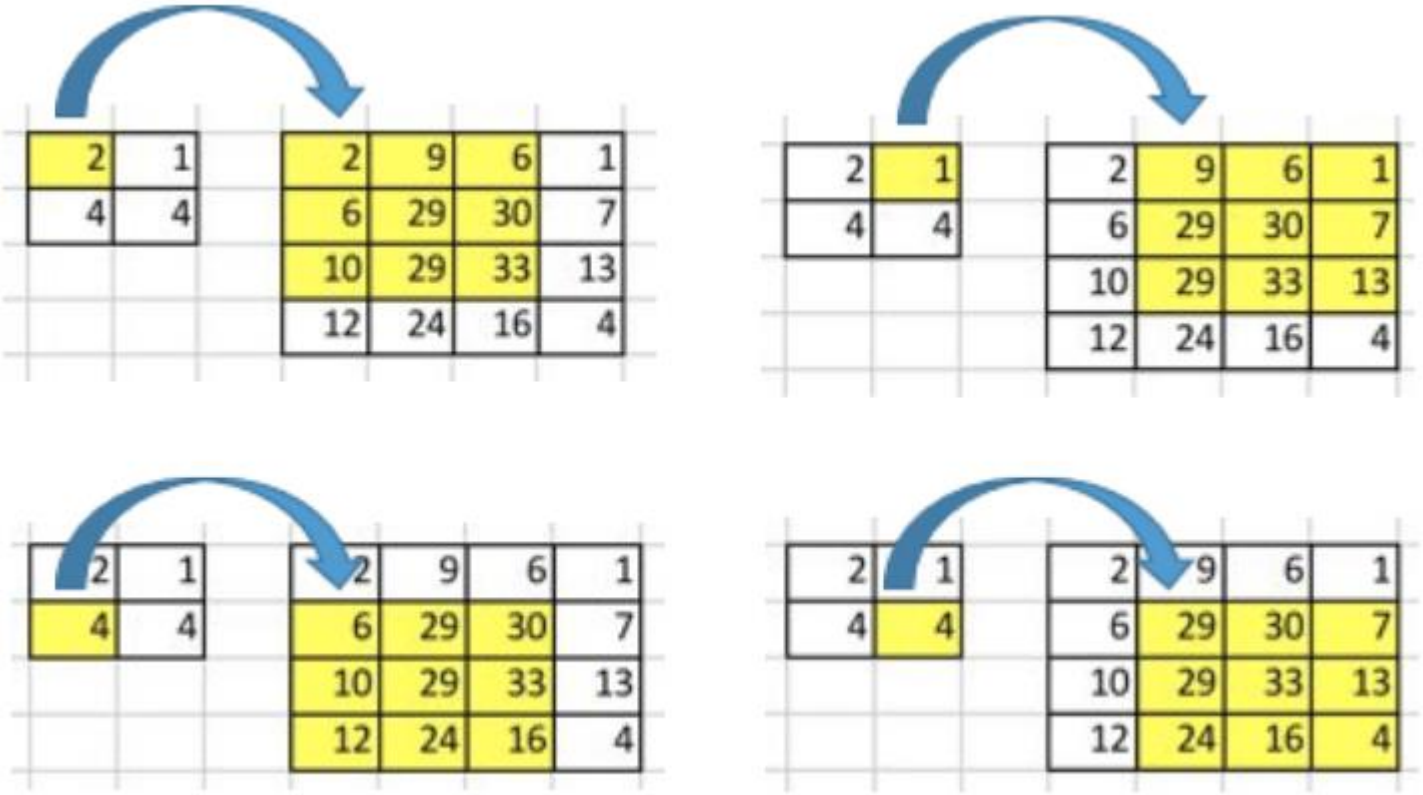
Transposed Convolution



https://towardsdatascience.com/up-sampling-with-transposed-convolution-9ae4f2df52d0

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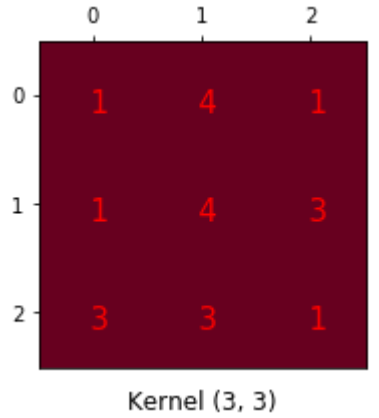
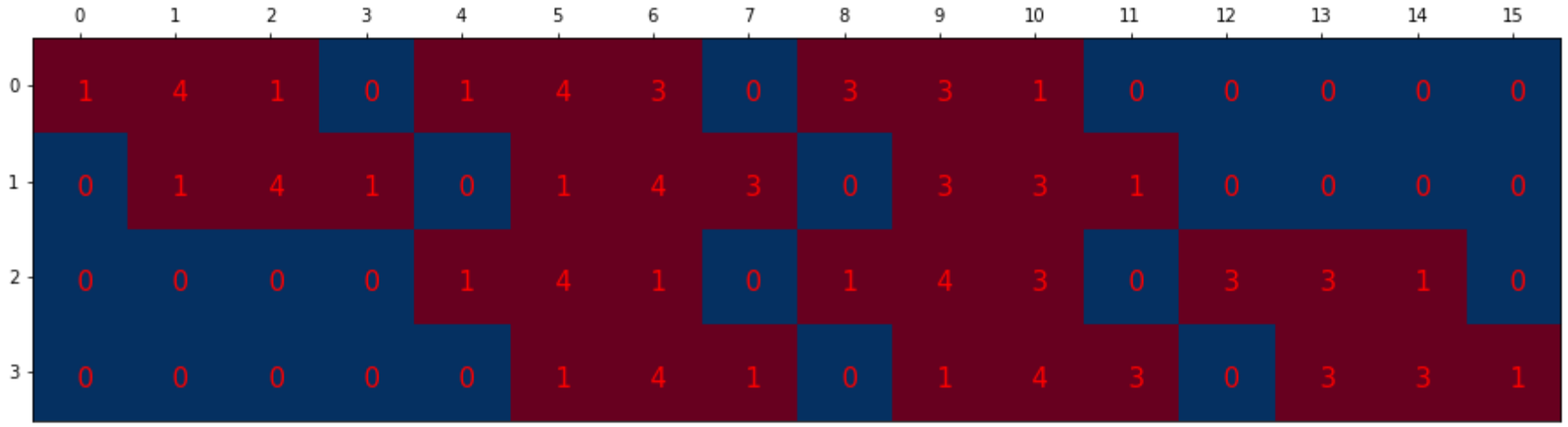
Convolution Matrix



Kernel (3, 3)



Convolution Matrix (4, 16)

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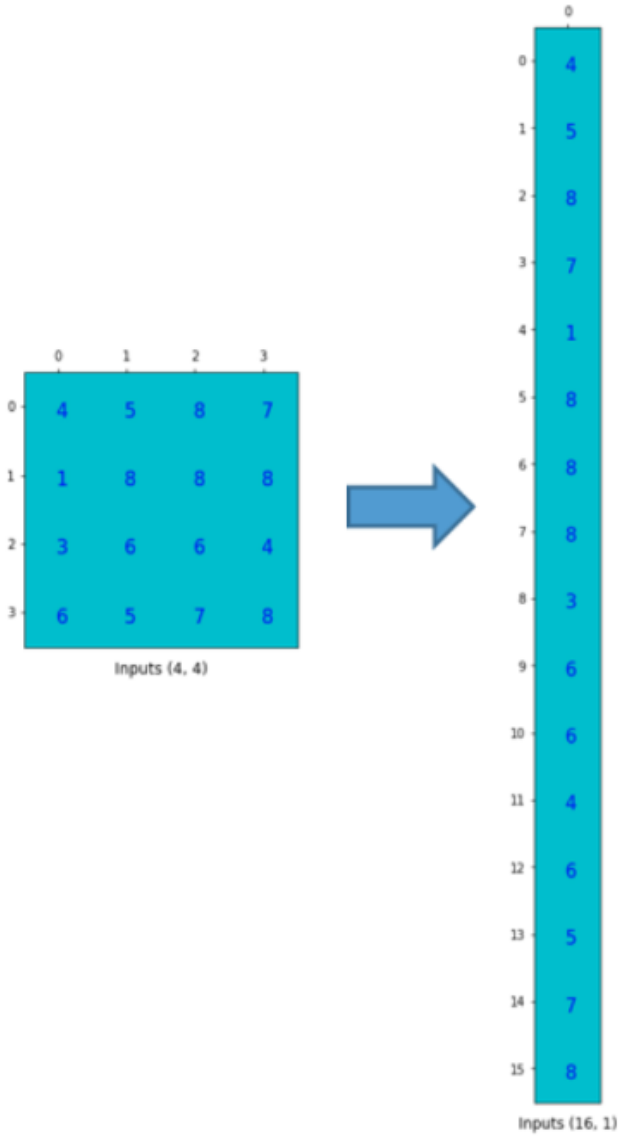
Convolution Matrix



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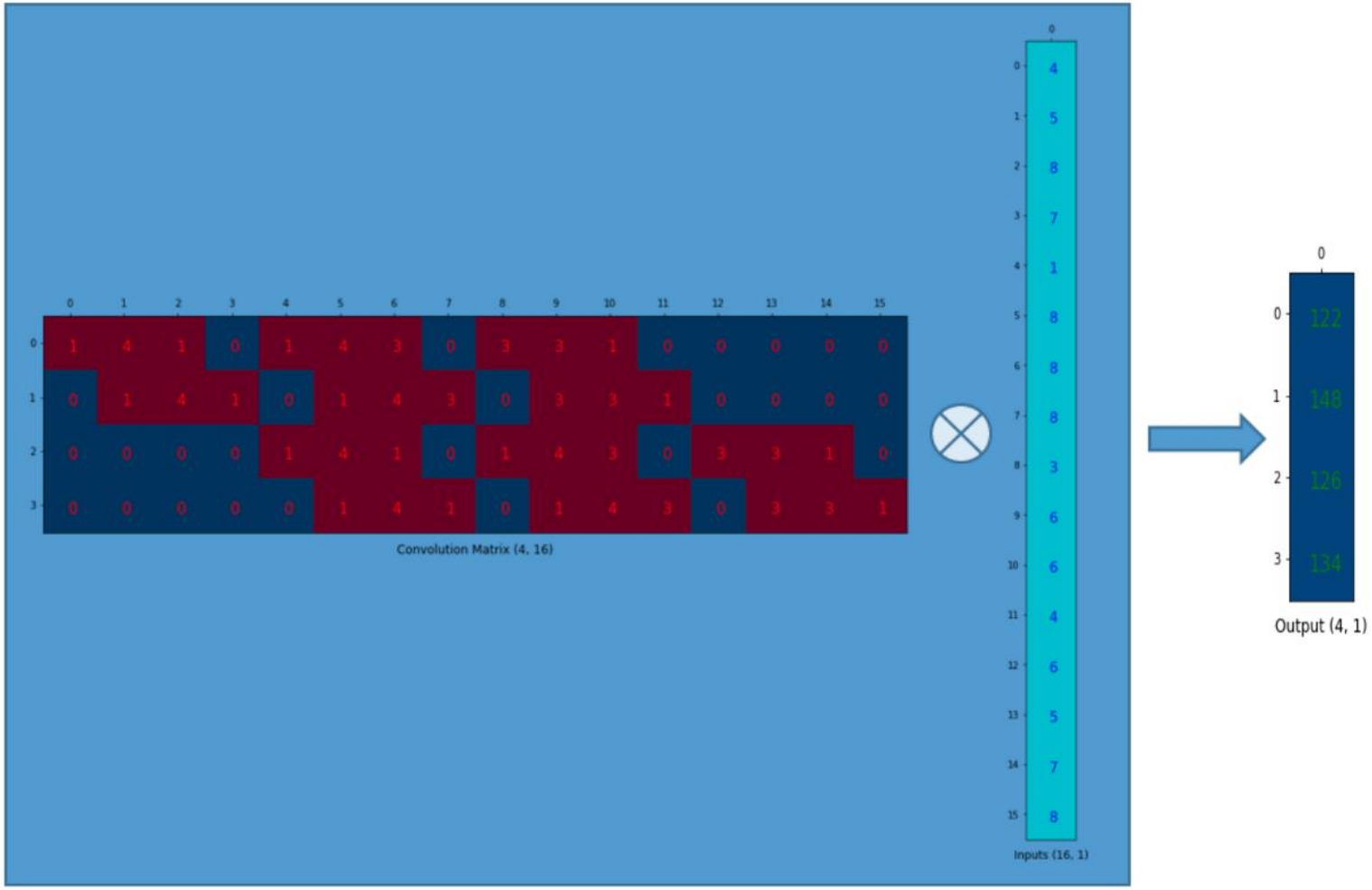
Convolution Matrix



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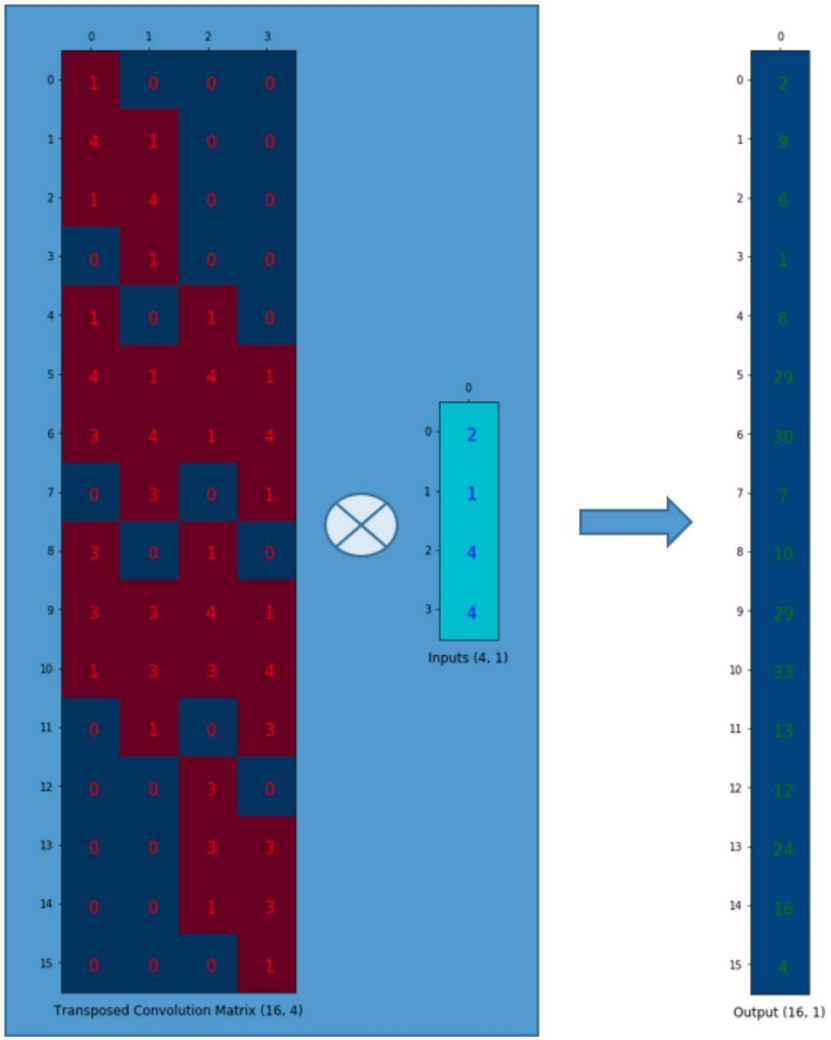
Transposed Convolution Matrix



https://towardsdatascience.com/up-sampling-with-transposed-convolution-9ae4f2df52d0

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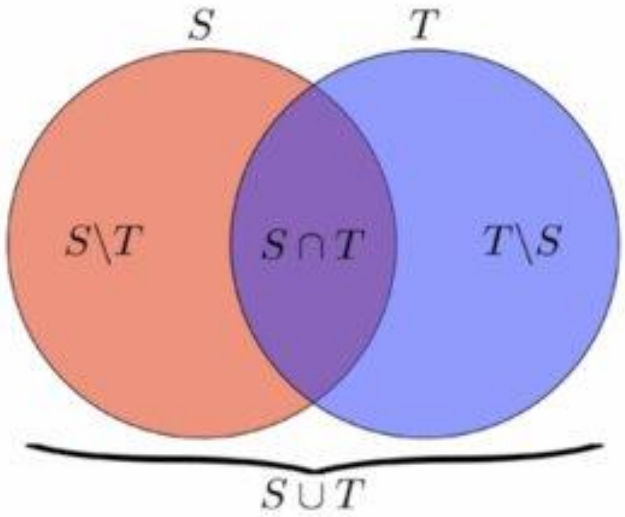
Dice Metric



$$Dice = \frac{2 \cdot |S \cap T|}{|S| + |T|}$$

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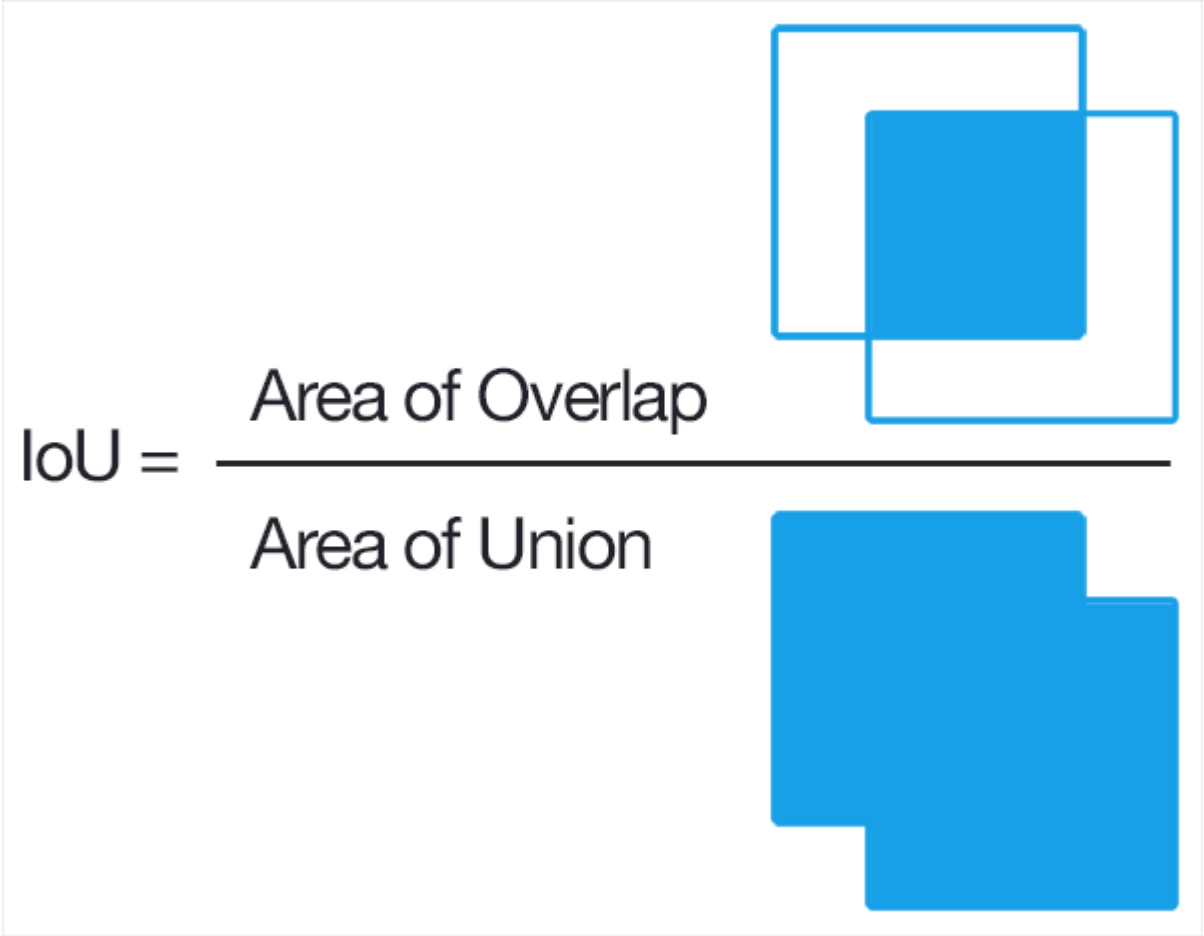
Intersection over Union



https://www.pyimagesearch.com/2016/11/07/intersection-over-union-iou-for-object-detection/

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Thank you!