

# Transposed Convolution



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Upsampling — process of increasing the spatial resolution of an image or feature map.

Common upsampling methods:

- Nearest neighbour interpolation — ~~CNN~~
- Bilinear interpolation —
- Transposed convolution — CNN

1	2
3	4

2x2

1	0	2	0
0	0	0	0
3	0	4	0
0	0	0	0

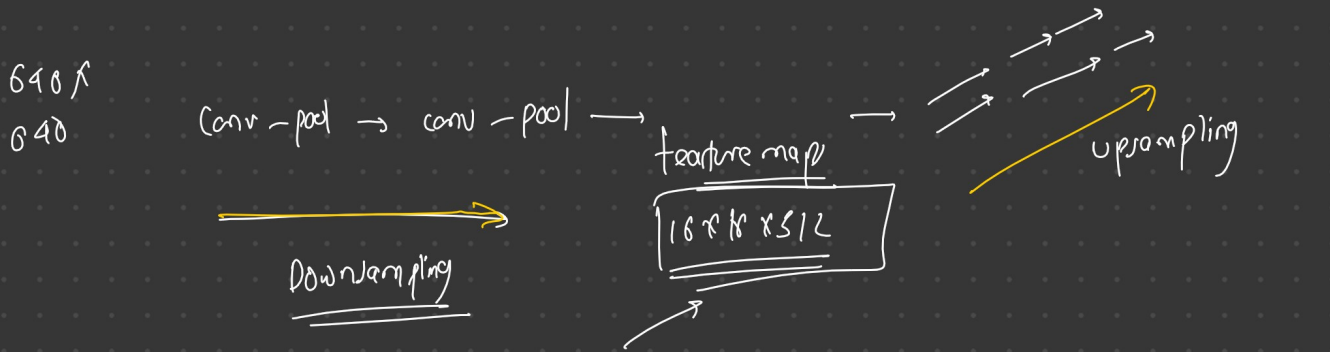
4x4

Transposed convolution  $\rightarrow$  Deconvolution operation

- learn how to upsample using trainable filters.

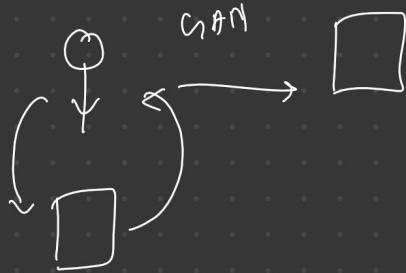
Uprompting is essential for many tasks:

- Image segmentation
- Super - Resolution
- Generative model



Use case)

- Medical Imaging
- Image Denoising
- Style Transfer



BP & CP

 $2 \times 2$ 