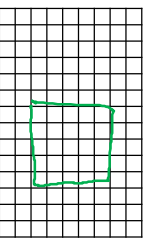
deeplearning.ai

Convolutional Networks in 1D or 3D

1D and 3D generalizations of models

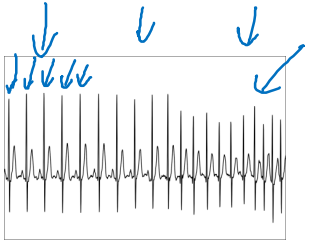
Convolutions in 2D and 1D



2D input image
14×14

*

2D filter
5×5



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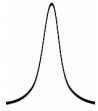

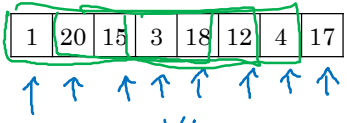

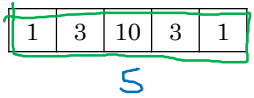

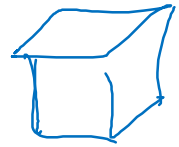

$14 \times 14 \times 3$ * $5 \times 5 \times 3$

$\rightarrow 10 \times 10 \times 16$

$10 \times 10 \times 16$ * $5 \times 5 \times 16$

$\rightarrow 6 \times 6 \times 32$

14×1 * 5×1

$\rightarrow 10 \times 16$

10×16 * 5×16

$\rightarrow 6 * 32$

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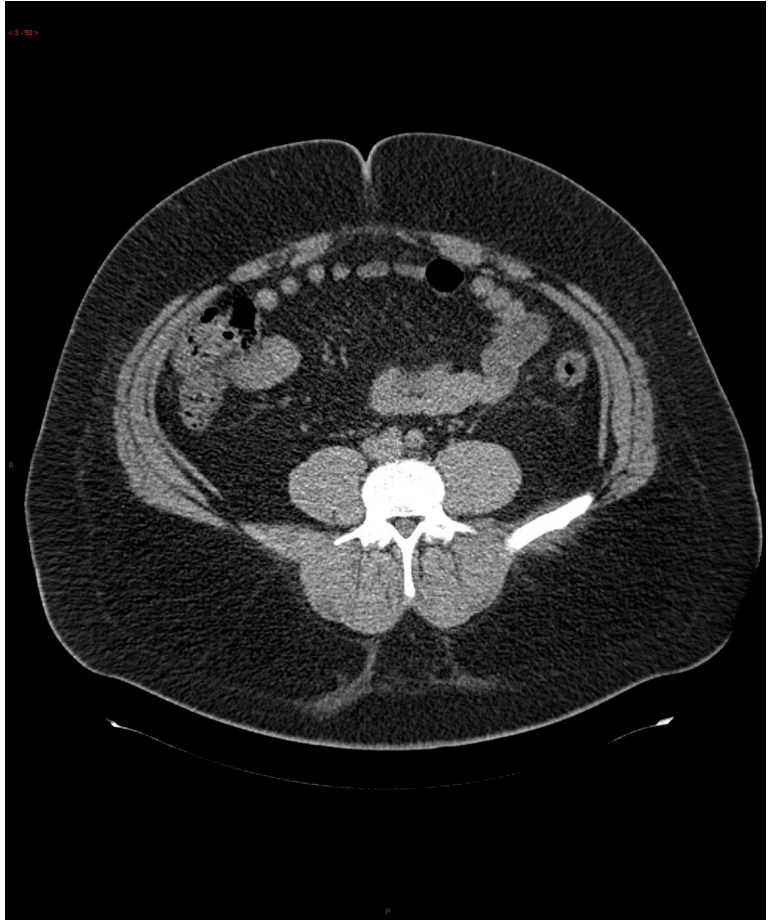
3D data



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3D data

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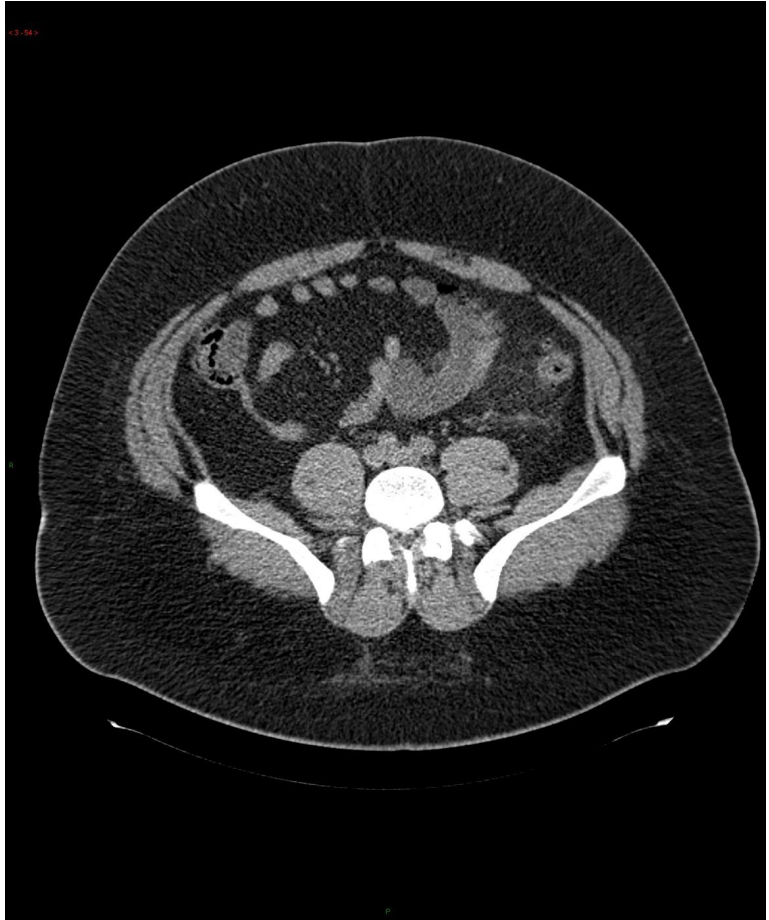
3D data



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3D data

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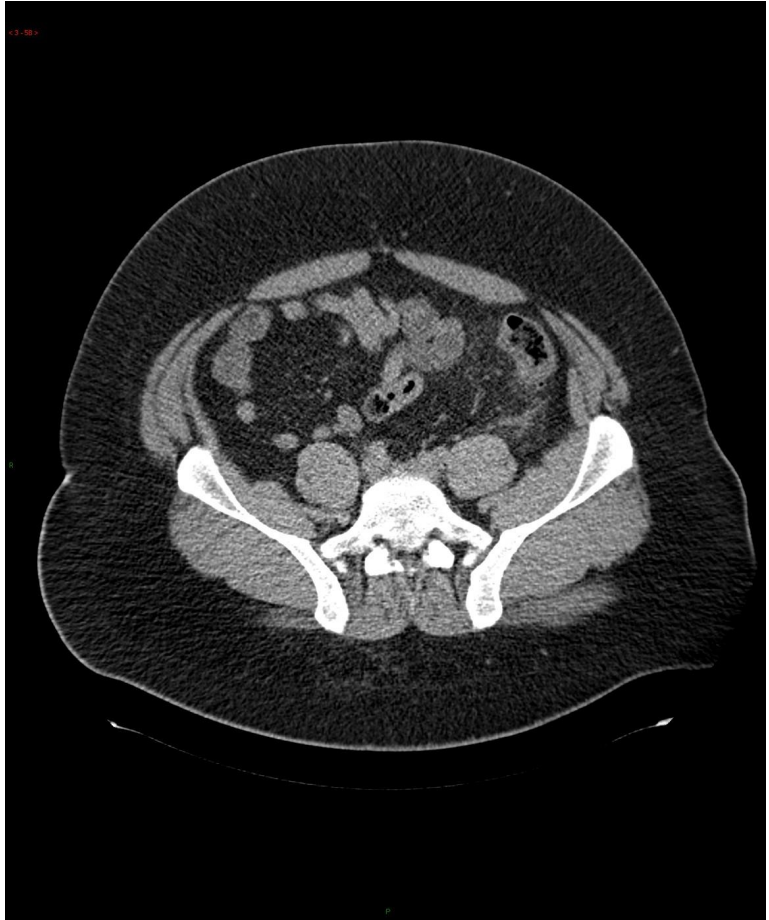
3D data



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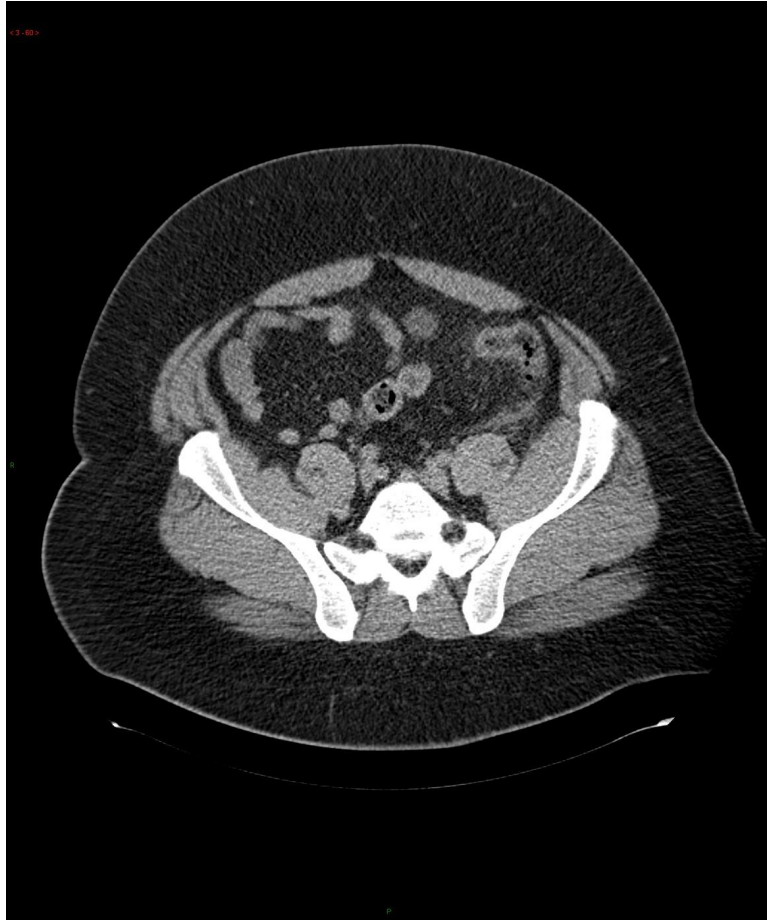
3D data



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3D data

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3D data

Andrew Ng

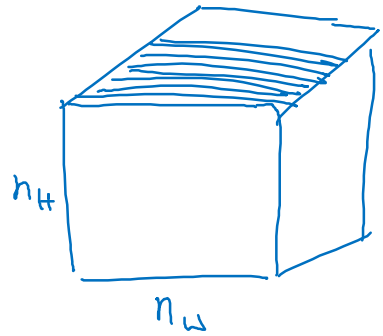
3D data

Andrew Ng

3D data

Andrew Ng

3D data



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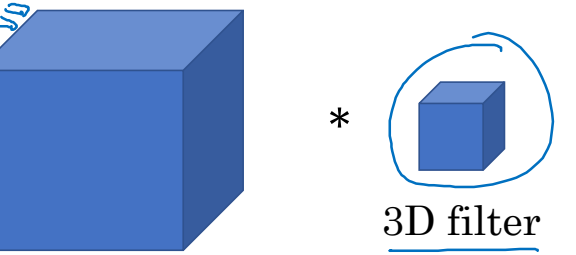
3D convolution



3D volume

*

3D filter

$14 \times 14 \times 14 \times n_c$

$* \; 5 \times 5 \times 5 \times 1$

16 filters.

$\rightarrow 10 \times 10 \times 10 \times 16$

$* \; 5 \times 5 \times 5 \times 16$

32 filters

$\rightarrow 6 \times 6 \times 6 \times 32$